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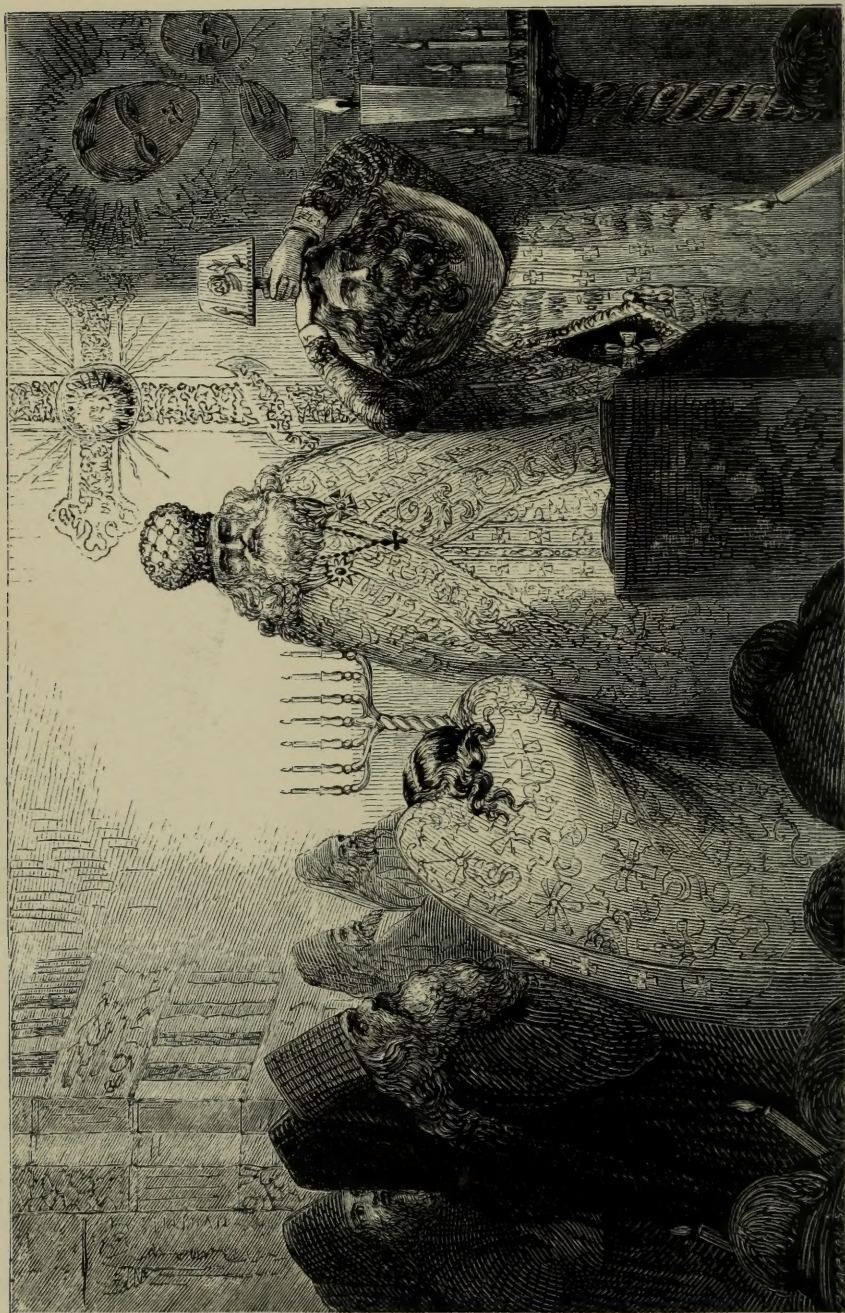
2 vols

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THE UNIVERSITY OF CHICAGO

THREE CITIES IN RUSSIA.

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C. P. S. del.

CONSECRATION OF THE ELEMENTS AT ST. ALEXANDER NEVSKI'S LAVRA.

See Vol. I., pp. 286, 287.

THREE CITIES

IN

RUSSIA.

BY

PROFESSOR C. PIAZZI SMYTH, F.R.SS.L.&E.,

ASTRONOMER ROYAL FOR SCOTLAND,

AUTHOR OF 'TENERIFFE, AN ASTRONOMER'S EXPERIMENT,' ETC. ETC.

Illustrated with Maps and Wood-Engravings.

IN TWO VOLUMES.

VOL. I.

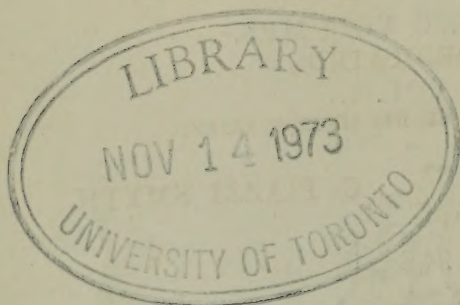


LONDON:

LOVELL REEVE & CO., 5, HENRIETTA STREET, COVENT GARDEN.

1862.

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TO

R. M. SMITH, ESQ., F.R.S.E.,

MERCHANT, LEITH,

WHOSE APPRECIATION OF SCIENCE IS EQUALLED BY FEW;
AND WHOSE WARM-HEARTED SYMPATHY, IN PROMOTING THE
SCIENTIFIC PURSUITS OF OTHERS, IS SURPASSED BY NONE;

This Book,

BOTH IN ITSELF AND ITS SUBJECT

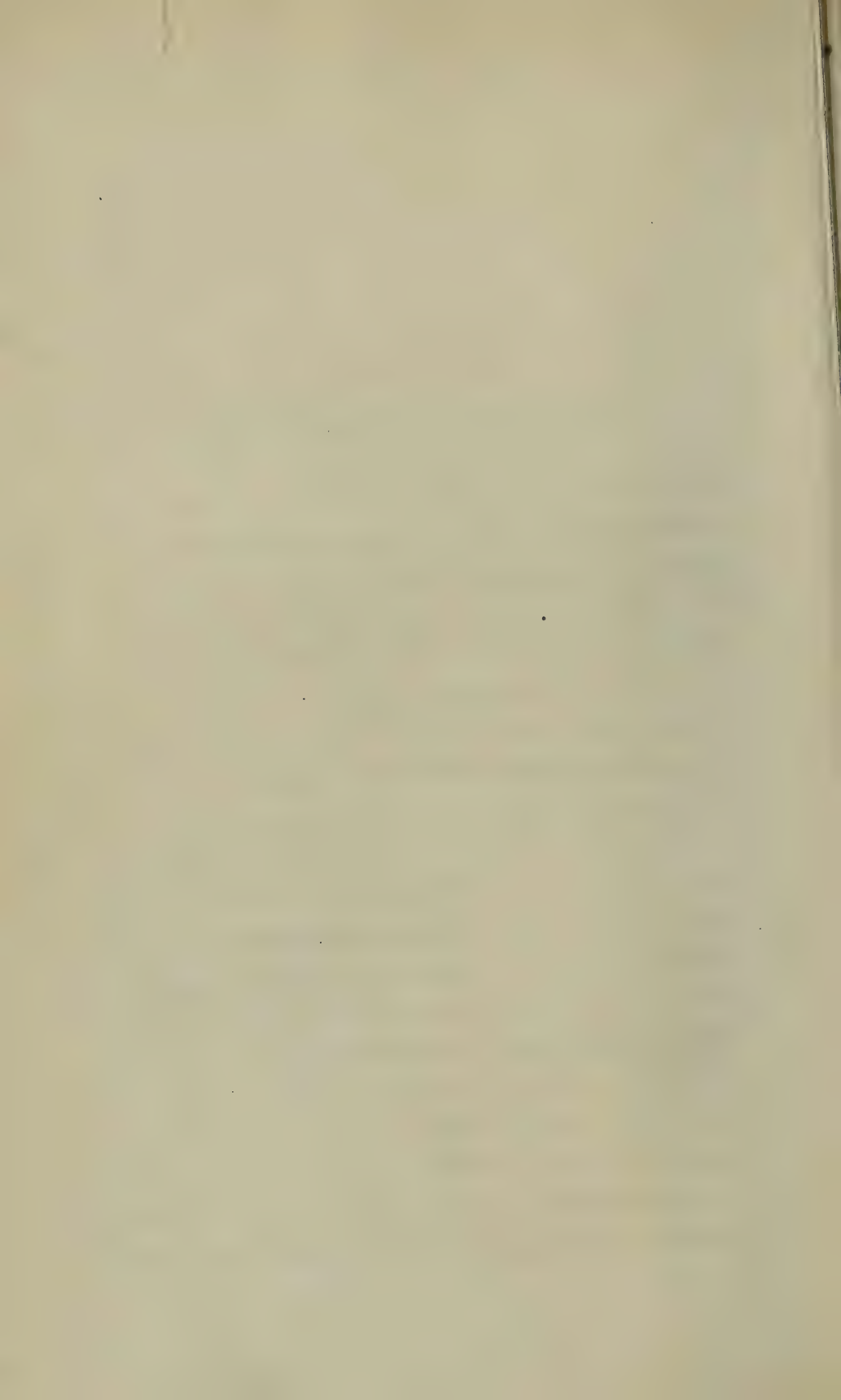
A MEMORIAL OF MANY KIND OFFICES RECEIVED,

IS DEDICATED

BY HIS SINCERE FRIEND,

C. PIAZZI SMYTH.

Edinburgh, April, 1862.



PREFACE.

HAVING essayed a visit to Russia in the summer of 1859, chiefly on scientific business, and having been rather unexpectedly detained there, while waiting for its full accomplishment, I took some trouble to utilize the extra opportunities thus enjoyed, by inquiring into questions of local interest, and trying to gain some acquaintance with a few of the leading thoughts and ideas of the more numerous classes of the people.

The result, though far from going deep, was often, as it would seem, of a novel character ; and gave so vividly the impression of a vast deal more having still to be written, before the feelings, traditions, and moving impulses of Russians, will ever be fully understood or sympathizingly appreciated by the British nation at large,—that I have since ventured on putting forth this humble contribution towards so desirable an end.

A considerable portion of the objects herein alluded to, can hardly fail of having been already well

discussed in older and standard works ; but inas-much as my professional character of an astronomical observer has not been often occupied by writers on Russia, and as I have seldom gone out of the direct line of my own and my wife's experiences of actual travel and conversation,—there will generally be a new stand-point afforded for reviewing old subjects ; while some new ones may also appear, and of a by-no-means uninteresting character.

With the object too, of putting the reader into possession, with the least trouble to himself,—of whatever we heard or noticed in the great Slavonic Empire, I have endeavoured to write little beyond a mere journal ; only suppressing such account, when amongst private friends, and somewhat condensing it in public, when we paid several visits to the same place or had held repeated conversations on reiterated topics.

Even within that limited scope however, I feel it necessary to pray condonation for many small errors, which cannot but be found in the work of one so little acquainted after all, with either the Russian people or their language. I have tried indeed as far as possible to be accurate, and trust that in every important matter I shall never be found far wrong ; but, in the English spelling of Russian words, if in no other subject, differences of opinion are already existing, and many mistakes may have been unwittingly

committed. In this question too, even as acknowledged in very learned quarters, little advance has been made since Dr. E. D. Clarke's day (1817), and he wrote,* "The unsettled state of English orthography, as far as it affects the introduction of Russian names, produces considerable embarrassment to the writer who wishes to follow a fixed rule. Upon this subject it not only happens, that no two authors agree, but that the same author is inconsistent."

How many forms of rendering in English, one and the same Russian word, he could have collected, I do not know ; but the following have been culled from later works :—

Isvostchik.	Droschka.
Ischvostchick.	Droski.
Istvosschik.	Drotchki.
Izvoschchik.	Droskoi.
Izvoshchik.	Drusschka.
Yesvosgick.	Droschky.
	Drosky.
	Droschkii.
	Drojki.

Much of this contradiction arises of course from the Russian alphabet having thirty-six letters, against our twenty-six, and many of them being by no means exactly interchangeable. Add to this, that much of the orthography in a Latinized form, having been originally borrowed and accepted from Ger-

* Clarke's Travels, fourth edition, preface, p. vii.

mans, it was not discovered until lately, and on comparing the English pronunciation of such words at once with the Russian, that German orthography is peculiar.

From this one trammel, therefore, at least, the combined authors* of the great work on 'The Geology of Russia in Europe,' resolutely endeavoured to free themselves so long ago as 1845. They write accordingly, at p. 658, "On this point we must observe that we have everywhere endeavoured to avoid the use of that method of writing Russian names, which, through the authority of various German writers from the time of Pallas, has become too prevalent;" again, "We write 'Yenesei,' like all other Russian words, as it is pronounced. The German J, as used by Pallas and the early German explorers of different parts of Russia, has unluckily found its way into all English maps;" and again, "In orthography we have usually endeavoured so to write the words upon our maps, that they may be correctly pronounced in the English language."

Following this plain teaching, I have not hesitated to extract Germanisms when manifest; and have therefore not allowed such would-be Cockneyfied forms as Wolodomir, Kiow, Suwarrow, or Wassali-Wassiliwitch to pervert for Englishmen the real Rus-

* Murchison, Verneuil, and Keyserling.

sian names of Vladimir, Kiev, Suvorov, and Vassili-Vassilivitch; but I hesitated much longer before venturing to restore "Moscow" to its rightful "Moskva." It is true that I had in 1859, heard Russians in Russia, continually denounce the former word, as a harsh German invention which they utterly repudiated, which was odious to their ears, and alien and uncouth to all Slavonic tongues,—but then the barbarism was so long settled amongst us! However, on finding presently that Sir John Bowring had boldly used the right word thirty-five years ago in his admirable little 'Russian Anthology;' and more recently, that the Smithsonian Institution of America had extensively employed the true and phonetic spelling for the English language of Shakespeare, or "Moskva," (the first syllable long and the second short, with a quality something between *Mosskva* and *Mohskva*) in notices of scientific publications,—there seemed to be no longer any reason why Englishmen, any more than Americans, should continue to pain their Russian friends by applying to that sainted "Mother City" a foreign and fictitious name.

Among the illustrations of the present work, the four maps are chiefly compilations from known authorities adapted to the occasion; but the six wood-engravings are from sketches entirely original, taken by myself in Russia; and looked after unceasingly

since, to ensure the engraver giving a faithful reproduction of whatever I had been able in the drawings to transfer from the natural scene to paper.

The gilt stamp on the boards, I may further add, is carefully copied from a photograph taken by myself in the Beloi Gorod of Moskva, and represents the very characteristic crosses of the church there dedicated to the "Birth of the Virgin Mary;" giving too, almost as exactly as the photograph, the beautiful and characteristic filigree work; the crescents under the crosses, which tell of labours and calamities unspeakable, undergone by mediæval Russians for the saving of Western Christendom from Tahtar devastation; and the picturesque chain-braces of long-looped golden wire.

Nor ought I to conclude without formally tendering, as I am most happy to have this opportunity of doing, my humble acknowledgments to the Right Honourable Earl Russell, Minister of Foreign Affairs, as well for his passport, as for his effective mediation with the Custom House authorities; a mediation, which prevented either delay, or danger, to the several scientific instruments I was carrying with me.

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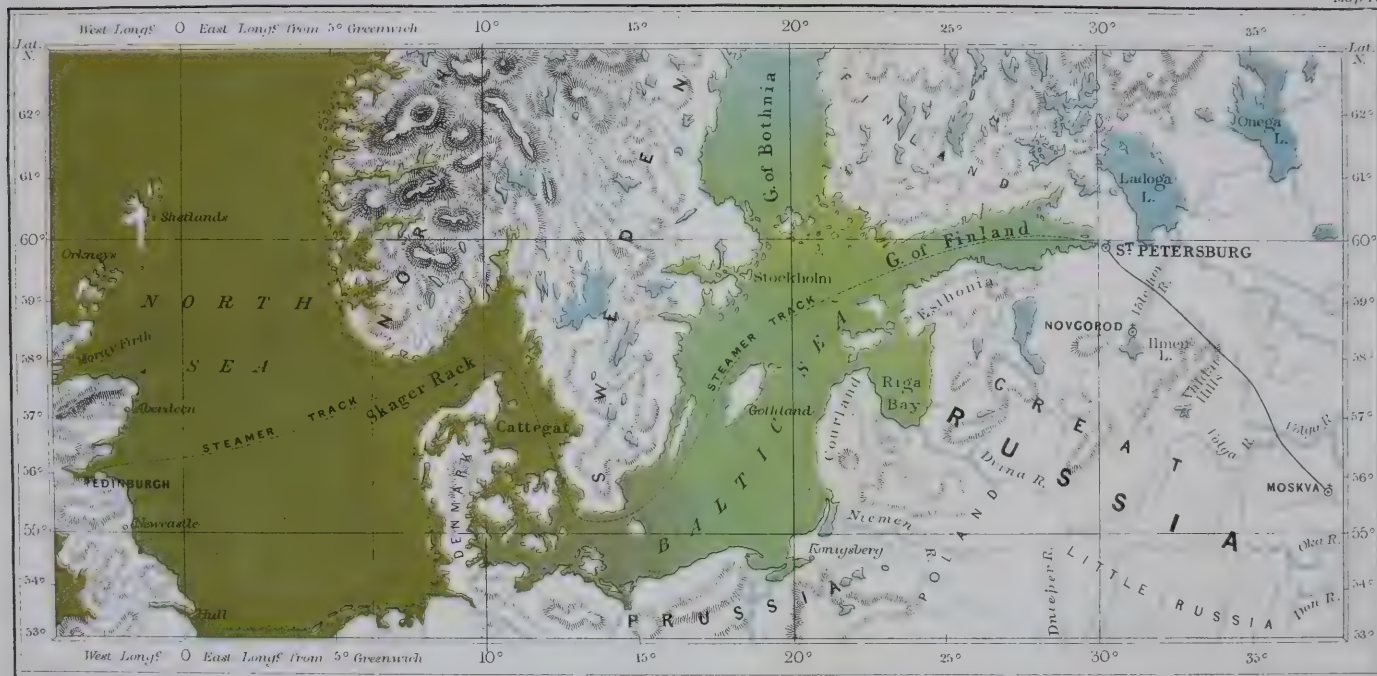
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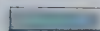
“It was thus that in the time of Pharaoh, Tsar of Egypt, when Moses was brought before him, the White-heads of the country said, ‘O Tsar! this man will one day subdue Egypt.’ And that is in truth what took place; for, in the end, the Egyptians were exterminated by Moses. Similarly the Khazars at the first subdued the Polaniens, but afterwards these brought the Khazars under their domination; and thence it is, how in the present day the Russians are found ruling over the Khazars.”—*Chronicles of Nestor, of Kiev*, A.D. 1097.



F. del.

Vincent Brooks, lit.

PHYSICAL MAP OF ROUTE FROM EDINBURGH TO ST. PETERSBURG, MOSKVA AND NOVGOROD.



denotes fresh water.



brackish.



the full saltiness of the ocean.

ERRATA TO VOL. I.

- Page 18, line 13, *for* downright *read* down right.
 „ 30, line 10, *for* though *read* through.
 „ 60, line 3, insert a comma after “agreeable.”
 „ 191, line 2, insert commas after “motion” and “that.”
 „ 191, line 3, insert comma after “morning.”
 „ 222, line 11, *for* calligraphy *read* caligraphy.
 „ 187, line 19, *for* unleavened *read* leavened.
 „ 288, last line but one, *for* Catherine I. *read* Catherine II.
 „ 290, line 7, *for* ts *read* its.
 „ 298, line 24, *for* black *read* back.
 „ 362, line 27, *for* filgree *read* filigree.
 „ 415, line 26, *for* waters *read* water, and dele comma after
 “continent.”
 „ 437, line 9, *for* opposite *read* opposing.
 „ 482, foot-note, *for* Bojici *read* Bojiei.

THREE CITIES IN RUSSIA.



PART I.

ST. PETERSBURG.

“Toutefois il ne faut pas oublier que la population de la Russie a triplé depuis un siècle ; quelques générations, et elle aura atteint le chiffre de toute la population européenne.”

CHOPIN, *Russie* : 1838.

THREE CITIES IN RUSSIA.

PART I. ST. PETERSBURG.

CHAPTER I.

SET SAIL FOR RUSSIA.

July.

AMONGST the many varied scenes of commercial activity presented by the docks of Leith in the spring and summer of 1859, there was one particular ship which far transcended all its neighbours in the energy of its proceedings, and the magnitude of the operations with which it was connected. On making inquiries, we ascertained this ship to be the afterwards ill-fated 'Edinburgh,' a screw-steamer of Leith engaged in the Russian trade.

Then, the poor vessel was in the full heyday of youth and success, making quicker voyages than ever had been known before in these parts; and by bringing the coast of Scotland within six days of so splendid a customer as St. Petersburg, was mate-

rially promoting mutual knowledge, and giving rise to kindly sympathies between two great nations; but now she is lying at the bottom of the stormy North Sea, and her excellent captain and able crew are no more; yet their memory lives behind them gratefully amid the scenes of their former toils; and by no one are they held in more estimation than by my wife and self, for we learned twice over to value their many high qualities when voyaging with them on board their swift-sailing ship.

The 'Edinburgh' was not a passenger-steamer, and it was only by favour that we were allowed to enter her. How it came about, was something in this way: being intent on trying a new altitude-measuring apparatus on board some ship or ships at sea, and wishing to apply its powers to the most advanced character, though perhaps the most difficult quality of modern sea-going vessels, we singled out the iron-built screw steamer 'Edinburgh,' as being closer to the desired ideal than anything else we could find. Her line of voyage would certainly not be over any track of actual ocean waves which might run mountains high, but it would cross the North Sea, which is in itself pretty famous for having an ever unquiet surface, vexed with continued ground-swells, and that would do just as efficiently in the experiments contemplated. Add to this, that the 'Edinburgh's' destination was Russia,—Russia, whose central obser-

vatory of Pulkova, the highest scientific authority in this country has stated that every astronomer should visit once in his life,—and then it is evident there were many attractions in the case.

On mentioning some of these ideas, when they were still in a very half-formed condition, to my valued friend Mr. R. M. Smith, himself also a Russian merchant, and a little disappointed perhaps that one of his easy-going corn-ships had not been equally attractive and suitable, he applied straightway to the owners of the ‘Edinburgh,’ and they showed themselves so very liberally inclined, that he was soon able to bring us from them a flattering invitation to take our passage on board their fine vessel, in any of its voyages to Cronstadt and back, as soon or as late during that season as we pleased.

Acting therefore on this most obliging intimation, we prepared to go out on the very next voyage, and conveyed ourselves accordingly on board the ‘Edinburgh,’ with all our traps, at six A.M., on the morning of July 23rd. The circumstances we found there were eminently characteristic, as well of North Sea sailing from the eastern coast of Scotland, as of the nature of the traffic between Great Britain and Russia. Mist, rain, and sharp-set wind represented the meteorology; iron in every conceivable bulky shape, and cotton bales, chiefly indicated the commercial materials concerned; but before everything else this

trade seemed to demand the most extraordinary vigour and astonishing dispatch. A whole ship had to be loaded within two days, and has now to be completed within one hour ; a strange scene therefore results. The hosts of grimy porters who did not leave off work last night until nine P.M., were at it again at three A.M. this morning, and they are still clustering as busily as bees about every part of the great ship. On her off side tons upon tons of coal are being delivered and heaped up on deck six feet high, out of lighters lying three deep, while on her quay side where the chief mercantile operations are going on, the rattling of steam cranes is perpetually announcing that huge bundles of pig iron, or mighty cast-iron water-pipes, or overgrown gas-mains, are being whirled aloft and then lowered, first quickly and then gradually with gentleness, through the yawning hatch. There the porter-men who have run cleverly under cover at the first descent, as cleverly run out again when the speed moderates, and wield and push about the monstrous hanging masses of metal until they are exactly lowered into their due positions. Then other hands tumble in bales of cotton, which are rapidly being disposed as packings and wedges by the untiring crew below, when in a moment, with a clanking of chains and ringing echo of cast-iron tubing, another great gas-main appears hanging above their devoted heads, and away they

all fly to their coverts again while the crushing load rushes terrifically through the first few feet of its descent.

Half past six A.M., and the work gets evidently more feverish, the men more energetically active. Steam and rain and Scottish mist mix up confusedly together. We catch one of the many clerks running about with umbrellas and note-books; demanding of him, with some hope of still being able to send to the post for our last letters, "When do you expect to be ready to sail?" "Well, really, I begin to fear," he replies, "that we shall not get loaded this tide, but I don't know;" and even while he speaks, more bundles of pig iron and more gas-mains and more bales of cotton appear thronging on the quay. 6.50 A.M. has arrived, and prodigies have been performed; but the minute-hand of the clock seems progressing so quickly in its inevitable path, that the question will persist in proposing itself, Is Russian voyaging going to be proved absolutely punctual, or only moderately so? Others see the crisis as well; the word is passed amongst the men, the gas-pipes ring down one on the other, whole heaps of pig iron are transferred almost instantaneously, bales innumerable of cotton are wheeled up from all sorts of sheds, and tumbled on board in great heaps, and then—as punctual as any railway-train—the 'Edinburgh,' Captain David Steele, steams out

of Leith Harbour, nearly as the clock strikes seven, and within, be it duly remembered, only three days of returning from her last voyage, a distance of sixteen hundred miles, and with a cargo of nine hundred tons of foreign goods.

This first step, however, attained, and the tide saved, our progress was no further than to the 'roads,' for there the packing and fixing of the cargo had to be completed and made ship-shape and snug for sea by professional hands duly retained for the purpose. But by noon this was all accomplished; the packers left in a tug, and the gallant 'Edinburgh' steamed away for good on her Russian voyage, dashing forward against a clear, swift north-east wind, and leaving both mist and rain to pass on behind her up the Firth of Forth, enveloping hill-tops and darkening the plains on either shore.

Our own route thus made visible before us, was now seen to lie gloriously between the Bass Rock of many histories, with its high steep cliffs blossoming strangely with snow-white birds, on one side, and on the other the antique Isle of May,—that tall sentinel isle whose stupendous basaltic steeps and precipices, and Gothic caverns and temples shaped without hands, were all overlooked by that philologic man who *secundum artem* deduced the island's name from "its extraordinary flatness,"—and then we entered, without doubt, the much-desired North

Sea. O classic Sea, in everything relating to the origin of our Scandinavian and Saxon races, and in thy classic weather too; for were they not these same north-eastern gales which freshened the sinews and intensified the energies of our early ancestors, sending them forth conquering and to conquer, to ever more western and southern lands?

Persistent gales! All that evening, and all that night, and all the next day, were we battling with their obstinacy right in our teeth. The second evening brought no improvement. "Cold weather, cold weather this, oh, very cold," said the officer of the watch, with an unsuccessful effort at cheeriness; for he could not say, after the custom of his country, "A fine grey day, Sir," as he paced backwards and forwards quickly and sharply, with his hands thrust far down into his pockets, and with his coat-collar turned up, and the flaps of his cap not only turned down, but buttoned fast under his chin.

At the time, we thought him most abundantly correct; for a stiff northern breeze was blowing as uncomfortable as if from an iceberg, and the surface of the sea was heaving convulsively with a low ground-swell, that tramped along powerfully from the north-west, but was yet broken into and often lumped up by the waves of the actual north-east wind. Uneasily, therefore, the ship rolled and pitched, now 15° in two seconds, and anon only 2°

in seven seconds, thus varyingly but unceasingly. It was actually more than even the animals on board could resist, for the captain's milch-goat, though experienced through several voyages, was compelled at last to seek some sort of shelter behind the coal-heap, after having been twice turned out of the cabin, and was presently reported sick; while a Skye terrier, taking out as a passenger to St. Petersburg, in order that he may rejoice the remainder life of an old Scottish bachelor there, whose fortune is growing while his health is failing, disappeared gloomily into a partially canvas-protected nook, where he declined all play, under the oppressive leaden sky, in the sharp whistling wind, and amid the creaking and choruses of creaking of every timber in the ship.

Now all this, gentle reader, being in the height of summer, may give you a tolerable, or, according to your constitution, an intolerable idea of the sort of tossing on the restless North Sea wave, that was delight to the Vikings and Sea-kings in their frail little craft of a thousand years ago: strugglings those must have been, you would probably allow under the circumstances, requiring more valour, more endurance of hardship and scorning of constant danger, than all the voyages since made by grand three-masted ships, amongst the coral islands of even a far-off tropical ocean.

Verily, thought we then, when steaming with difficulty over the Vikings' ancient track, verily, we of modern times may look on in amazement and admiration at those primitive North Sea heroes, whenever we attempt with our puny frames to repeat the least of their hardy exploits. How little, too, of their vital character has any writer yet succeeded in worthily placing on paper. Literary materials, to be sure, have been almost entirely wanting, and until recently our antiquaries have rarely ventured to go far enough back into the dusk of the past. Did not a Scottish author of a ponderous quarto, some fifty years since, think that he had ascended to a sufficiently early time, and to a most glorious exploit, when he began his grand account of the sailings on our coasts with the voyage of King James V., who in 1540, with a whole fleet of ships and no enemy to oppose him, sailed successfully round his own kingdom, from the Firth of Forth to the Firth of Solway?

Deeper research is now, we are happy to think, being customarily carried on in many quarters, and numerous ardent inquirers, no longer content with the orthodox Georgian-era histories, pursue their minute investigations up through the times of Norman, Danish, and Saxon royalty, to earlier beginnings still.

Even the Laureate has followed in the same

track, and given us an *Arthurian* epic. In those immortal 'Idylls,' who can fail to admire the majesty of the characters depicted by that master hand?—and yet, true to every epic since the age of Homer downwards, the hero is not the personage who most engages our attention or enlists our feelings; for all the while that the poet is occupied in singing the Christian praises of "the blameless King," with all his courtly train, there is rising in our minds a strange longing to know something more of those whom he stigmatizes in occasional dark vistas of lurid words, as "the heathen of the Northern Sea;" *i.e.*, if the truth were known, none other than those mighty men, our early ancestors, who came riding on the wings of the storm, and before whose stalwart arms went down, in battle's fiercest fray, that "blameless King" and all the knighthood "of his table round," girt though it were with new-born chivalry, and with what power "the Roman left behind;" then on that ruin built those Northmen up a temple fair, which gilds the world e'en yet.

In such frame of mind did we ruminate, as we stood there on the steamer's upper deck, until long after sunset. We say sunset, not that we had seen the solar orb descend, but because the air was evidently growing darker, and an angry red hue, which for a time suffused the lower surfaces of the clouds,

had departed, and left nothing behind to replace it, when lo, a picture—and something more than a picture—is enacted before our eyes. First, a small speck appears at intervals on the horizon, ahead of the steamer. Sensibly the speck enlarges, and in a quarter of an hour, over the tumultuous and raging waves, we see a frail little galliot under close-reefed sails; sails which are all drenched with brine; and, like the ropes, bowed almost double with the violence of the wind!

We are struggling on in our eastward career, while she passes by our side, in her parallel but opposite progress to the west. And what a progress! for with all our troubles, we are yet a leviathan in size and power, compared to her mere minnow proportions. It is fearful to watch her. Now the crazy craft mounts high up on a long wave, head erect and side over; then in a second she plunges violently downwards stern uppermost and nearly disappears behind a watery surface, so that for some moments we see only the upper parts of her tiny masts and mainsail. Then again up she rises on the next wave, but deluged with spray, and only to sink once more below the flying deep blue waters, a sort of continual foundering. And does the little galliot ask for assistance? Not she, we trow; nor the men aboard. They, three perhaps in all, pass the big steamer with no more notice

than if she were a mere seagull skimming idly along. A man at the tiller is the only one visible on deck; and he, instead of calling for help, or being paralyzed by fear, is smoking his pipe quite unconcernedly. Thus do they pass us by; and so long as we can continue to see anything of this mere shallop of the seas, it holds on its course without the smallest interruption, until at length it disappears beneath that already dark and indistinct line, where the western waves fret against the western sky.

Now, could we only enter into the minds of those humble men in that galliot of the North Sea,—hardy men with scanty education, holding their way not only fearlessly, but joyously, among the waves of a sea wintry even at midsummer,—might we not find some of the elements still of the Viking soul of old? But then again, though we question them, who shall succeed in discovering those men's inner thoughts, or rather, their latent faculties?—faculties that are latent in a great measure on account of the restrictive bonds of our most artificial social system, and of the trammels which legal theory and class legislation have been spinning around the working man in this country for the last seven hundred years.

All well enough, with some, to lament that these men are of the same drunken class as too many of the sailors of any of our seaports; men who need

societies of good lady-folk to point out to them what to eat, drink, and avoid, and the way they should go. But, just as the labourer most reckless of his wages when in England, becomes a saver and a commercialist in America, the moment that he finds the high Transatlantic rate of interest to repay the trouble of looking after what accrues from a small portion of money, so who can tell what opportunity may do, and with gentle as well as simple?

How little any one dreamed of the capacity of the Emperor of the French, until his occasion came! It seems but the other day when I had the chance to witness in London how, soon after the discovery of the use of ether in surgery, a worthy old gentleman, lately deceased, entertained a dinner-party of the Philosophical Club with a jeremiade on a scene he had been present at only the previous evening.

How sad to think "" ejaculated he, "there's that stupid young fellow, Louis Napoleon, been making such a fool of himself; he has been taking this new anæsthetic at an evening party, and before all the ladies; and oh! he kicked up his heels, and talked such nonsense! Is it not lamentable to think that he must have forgotten the proper respect due to his ancestors and existing relatives, as well as to himself?" "Oh! yes, indeed, sad! sad!" exclaimed a chorus of wise heads that gravely shook as they declared that Louis Napoleon must have become

perfectly oblivious of his being a Napoleon and a prince ; and that they, the philosophers, could teach him so well how he ought to acquit himself in his behaviour, so as to be an honour to his family, and a creditable young man to all about him !

North Sea reveries, however, cannot be indulged in by landsmen for long at a time, and we had many reminders of other things, for the weather was continually becoming worse and worse. Indeed when midnight had arrived and the watch been changed, the 'Edinburgh' was pitching and rolling more violently than ever ; the wind, too, was colder and stronger, and the sky darker, though the moon was up, forming altogether a truly North Sea night, and we were then sailing over one of the Dutch fishing-grounds, for the possession of which there were sore battles long ago between England and Holland.

Precisely, though, as the weather grew worse and to us disquieting, so did the stout, rosy-cheeked mate who had now taken the deck, become more pleasant and communicative. He was evidently in his element, and wanted to talk, so we did our best to listen ; he thus soon stocked us, even to overflowing, with accurate information on many matters of the last importance to himself and his profession ; for instance, as to the number of hands required to form the crew of a 700-ton steamer on the one hand, and of a barque

of equal tonnage on the other ; thirteen sailors with nine engineers and stokers in the former, against twenty sailors in the latter. Profuse was he, too, with his hypotheses on the sailing powers of large clippers like the ‘Magenta-colored Jacket’; and he did not object to state fully his private disbelief of those wonderful qualities attributed to some ships of “*forging ahead* during a calm at the rate of two and a half knots per hour ;” he had been on board some rather smart ships : in fact, he must say some pretty considerably smart ships, but had never yet been so happy as to see them do that.

The topic, however, which he dilated on with the most evident satisfaction, was, his preference for being first mate of a large, new, well-found, well-cared-for ship like the ‘Edinburgh,’ over the greater apparent honour of being master of many a paltry craft he could mention, schooner or brig, ill-found, ancient, and neglected, yet for all that sent away on long voyages, and, worst of all, to those warmer parts of the earth which he detested to his very soul.

“When once, unhappily for him,” he said, “on board a vessel of that description, he had experienced some of the worst weather he had ever been in in his life.” We inquired what might have been the greatest height of any of the waves on that occasion. “Oh ! the heaviest sea, you mean, Sir,” said he, in answer. “Well, Sir, *it was* the heaviest

sea that ever I have known, and it was off the coast of Portugal. We were coming home with sugar from Brazil, and we got the storm first near the Azores. Well, Sir, the hurricane followed us day after day, and at last one night it just seemed as if it was going to make an end of brig and crew and all of us together. The wind, when we were on the top of a wave, blew as if it would carry away everything we had; and when again we got into the trough, the sails were becalmed halfway up the masts; just then, too, the ship *would* always fall over towards the wind, and in that position, the next sea looked exactly as if it was coming downright upon the top of us. We were all so weak, we could none of us haul a rope handsomely; and I did not know how feeble I had become, until one of the crew died in his berth, and then I found that I could not lift him, and it required three of us to raise the poor fellow's body up through the companion."

"What made us so weak, Sir," he continued: "the cold? No, it was not the cold. I wish the weather had only been a little cold then, for that would have set us all up; but we were coming home from a tropical voyage you must mind, and had been losing our health and spirits by living down there under them shiny blue skies for several months on a stretch. That was surely enough of itself; but we had hardly left Pernambuco on our

way back, when a great wave washed all our water-casks from the deck, and two big barrels I had below were so leaky that all the water ran out; leastways, all but a few buckets. So there we were grilling away under the Line, and reduced for twenty-two days to a tea-cup of water apiece for drinking, and none at all for cooking."

We here made some sort of sympathizing ejaculation, and then the yarn began again with, "Oh! she was badly found, was that brig, Sir, in every way; and I'd have had nought to do with her, if I had known how it was. But they came to me when I was out of work, and asked me if I wouldn't take the command; and so I innocently said Yes. I didn't know then that she had had three captains, one after the other, while she was fitting, or I'd have looked a little sharper. But, bless you! I had no time to make any examination, not I; I hadn't time after getting on board, even to take off my hat, before the steamer got hold of her, and she was away down the river."

Just at this point of the mate's story, there came several rather ugly slaps of waves against the iron sides of the ship; and the spray, white even in the dark night, drenched all the fore-deck in such quantity, that it was well the captain had thoroughly secured his outside bales of cotton under thick tarpauling. The ship, too, began to dip her nose

several times into the waves, rather deeply. This was happily so far only the temporary effect of some chance combinations of different sets of waves, running together in one place, and for the moment producing these high undulations. So after visiting each part of the deck, examining the course steered, and assuring himself of the watch being all at their posts, the happy mate returned to his place and yarn of other times, resuming with, "Oh, a downright unlucky voyage that was of mine south. We arrived at Rio Janeiro just at the unhealthiest season of the year, and we could not get any freight; the planters wouldn't send down their coffee in those months, for fear of their slaves falling sick; and while I was waiting there, all my hands died one after the other of fever. Then I got a new crew, and they had not been on board two days, before four of them were taken; so then I got away as quick as I could to Pernambuco, and filled up with sugar. But fever was aboard of us, and what with the want of fresh water, and the exposure, we were not a little bad when we reached the Mersey at last. Then, too, it was found that water had got to the cargo, and on the hatches being opened, the sugar was seven feet below its former level; why not too? when the chief part of it was running about, with salt water in it, like treacle; and it did send up such a smell. But some clever fellows, and amazing clever

they must have been, got hold of it and boiled it down, and refined it, and sold the good mixed up with a portion of the bad, and I believe the owners made a tolerable penny after all."

We were about to ask further of that "clever" manufacture; when the steersman sent forward a complaint that his compass was hanging, and refusing to move; which was strange when the whole ship itself was tossing about like a cork on the rolling waters. It was a bad case, however, the compass. Nothing less than that the instrument-maker and adjuster on shore, with all means and appliances at command, and a comfortable room to work in, had not fulfilled his duty; whence it came that now, in the midst of the bitter north-east wind, and thundering blows of the North Sea waves as they broke heavily, and sent their salt spray flying right over the decks,—this delicate and precious instrument, on whose indications alone we could direct our course, had ceased to act. So, as usual at sea, when matters come to extremities, the captain was called.

CHAPTER II.

THE BALTIC SEA.

July.

FEW are the accidents that can occur on ship-board, without bringing out in a favourable light the British seaman's happy knack and peculiar skill in effecting repairs. So our late compass derangements were soon put to rights, and, no way being lost, we presently had the pleasure of finding that three days' continual steaming from Leith, had sufficed to carry us across the chief breadth of the North Sea, and into the wide, deep strait of the Skager-Rak, or Sleeve; between the lowlands of Germany on one hand, and the bold deeply indented coast of Norway on the other.

There the sharpness of the Viking weather we had been in, greatly abated; blue sky reappeared among the clouds; these slowly changed in form, from low misty rollers to more elevated cirrostrati and cumuli,

and even the swell of the sea was considerably quieted. Frequent sails also began to be noticed, progressively increasing throughout the day, until towards evening no less than thirty-five were counted on one side of the ship alone; and on taking up the telescope they multiplied in the forward distance, like the stars and nebulae of the astronomer.

All night long lasted this pleasing improvement in the amenities of our voyage, and with the next day's light, land was seen on either side of us. The thermometer being lowered, showed that we were entering warmer seas; for from $60\cdot5^{\circ}$ yesterday evening, when about entering the Skager-Rak, it had become $63\cdot5^{\circ}$, and before long rose to 64° , 65° , and even $65\cdot5^{\circ}$; the saltness of the water decreasing all the time.

Meanwhile a brilliant sun began to shine joyfully out of a clear transparent sky, and continually as we advanced, all Nature assumed a more agreeable and even a Southern aspect. The water was calm and blue, or scarcely disturbed into a luminous ripple by gentle western airs, while across its dimpling, scintillating surface, the lands of Scandinavia came stretching forward nearer and nearer to be admired.

First, on our left, the knolly forms and pink aerial hues of the "Koll" hills of Sweden, arrested our attention; granitic they were apparently, and well bearing out Sir Roderick Murchison's expressive

term of a "highly crystalline country," yet not without its arable plains and trees and pleasant villages and frequent church-steeples, as well as a few tall chimneys.

Then, on our right, came the fertile shores of Denmark, where no longer mere barren pines and firs greeted the eye, but cornfields and the rich green of deciduous trees, large in stature and gloriously rounded in form; while the neatest of cottages never very small collected here and there, and large mansions occasionally peeped out from amongst wooded parks. On the water little skiffs were darting about in many directions with low quaint sails; a variety of merchant vessels were sailing along in stately guise on either side of us; and far, far ahead, in the dim grey distance, where the opposite coasts, as faint as cloud-land, almost met, and numberless forms of ships could just be made out, pressing into the narrow aperture with all their studding-sails set, like giant birds with outstretched wings, there, we were told, is the famous passage of the Sound, and Hamlet's Castle of Elsinore.

Oh! name of magic sympathy. How did even a rigid Presbyterian on board, confess to feeling an interest in the fate of the Prince of Denmark! As we approached closer and closer, he questioned and begged the very sailors, rude and unlettered as they might be, to show him where Hamlet lived,

and where he buried his father ; and then utterly regardless of the palace of the present King, and the batteries, and the furnaces for heating red-hot shot, which were also pointed out to him, the austere man looked only towards “the garden of Hamlet,” and vowed a vow, as it so chanced in our hearing, that on returning home he would straightway inquire for Shakspeare and read that “comedian’s” drama tale.

“Ay, read it by all means and weigh it well,” we put in, “but look also into the *true* history of that large-hearted Danish prince, as related in the early annals of Denmark. Their compiler, Saxo Grammaticus, writing in the twelfth century, must have had many well-remembered traditions to proceed upon, and you will find many of his incidents more natural to the times,—shall we say the eighth century?—in or near which Hamlet must have lived ; for example, in place of Polonius behind the arras, it is a courtier under a heap of straw in the Queen’s apartment, to overhear her conversation with her son. Yet the human and poetical interest in Shakspeare’s characters will not be lessened. Believe also, that it must be good for any one’s mind to look back occasionally into olden history, and contemplate those always few and far between really great spirits of mankind, who were moral before the light of Christianity had reached them ; heroically

devoting themselves, in the midst of the darkest of the dark ages, to doing what they considered their duty, and in this freely expending their lives, though there were no correspondents of a press of the nineteenth century by, to behold and chronicle their every deed."

Our listener's eyes beginning now to open rather portentously, we continued in a milder key, "Nay, Mr. Presbyter, be not alarmed even if we hint that there is in S. Grammaticus much more than enough of telling subject, exciting incident, and of your own national traits as well, to form another full, complete, and five-act Hamlettian drama, beginning only where Shakspeare's immortal poem terminated; for though he concluded by killing his hero, we know from the much more ancient records of Saxo, that Hamlet, or Amblett, came out unscathed and splendidly victorious from the overthrow of his sinful uncle and confederate nobles. Not only so, but that having entirely justified his proceedings to the people, and thrown away the cloak of pretended insanity he had worn so long, he was unanimously rewarded by them with the crown of Denmark; and then, after reforming and organizing the state in a masterly fashion, he set sail to seek for the worthiest lady in all the West, to become his honoured bride.—And where did he voyage to find her, do you ask?

"Why, where else do you think it likely, that so

wise a prince would think it worth his while to go, except to Scotland? To Scotland accordingly he went, where at that time the young 'Queen Hermetruda,' of twelve hundred years ago, was in public as staid, severe, and grandly proper, but withal as beautiful, feminine, and truly good, as any of those later representative ladies of the Scottish Presbyterian Kirk, who have been so charmingly, yet uniquely portrayed by many a Lowland writer of the last and present centuries."

While the 'Edinburgh' was thus quietly waiting to satisfy the usual formalities of the Sound and within a few hundred feet of the beach, there was that fine old architectural pile of Elsinore, full and close before us, resplendent and yet venerable in the warm, soft sunshine. How we gazed on its noble antique structure, palace and castle combined; stern weather-beaten walls are all it first shows from the ground upwards; but at a certain height, just deemed safe in olden times, many corbelled windows begin to decorate with light and shadow the flat surfaces of the lower masonry; while above them again, fantastic gable-ends break in upon the otherwise too long horizontal lines of the nearest roof. But beyond this are other roofs, and continually other gable-ends of interior buildings, more ornamental still, and speaking more of the court, than of military defence; and then from among them all,

there shoot up spires and turrets, and one ambitious pinnacle with dome on dome, and balcony and fret-work, and gilded weather-cocks, extending high up into the sky. Below, the building is backed by the dark green woods of Denmark; above as we chanced to see it that morning, by a faint imagery of fairy forms of highly charged electric clouds, barely visible in the overpowering brightness and distance of the illumined atmosphere. But we can just trace their cumulous masses, in "camel shape," or "weasel-backed," or "like a whale" if you will, as they arrange their serried ranks, and meet and clash and dissolve in air, and then re-form once more, to play again their ghost-like misty parts.

Truly there was witchery in the scene, and our voyage had been for some time resumed, and we were already wafted far away down the Sound, through ships innumerable, some at anchor, some spreading their white sails in the balmy air over the quiet waters, before we became aware that there was a Danish pilot on board.

"O Danish pilot, tell us something of Denmark." And then he, a tall, handsome, brown-broadcloth-dressed, and even gentlemanly man, launches forth in praise of Denmark's King, and shows us the monarch's palace in the country, and his deer-garden, and enlarges on his simple habits, and his love of plain common sense, and never tires of the theme.

“Are these all Danish ships we are now passing amongst, pilot?”

“Oh no! Sir, there is not a Dane among the whole of them; that one is a Dutchman in ballast, and that beyond is a coal brig, and that’s a Hamburg schuyt, Sir.” But after some ten minutes more of the ‘Edinburgh’s’ ever rapid steaming, he comes out with “There is a Danish schooner, Sir; that one with the beautiful black hull, and the tall masts, and the full flowing sails; and there too, is a Danish frigate, Sir, with its hull also quite black and so glossy and all its ropes so taut and its yards so square. And that large building is another palace, which the King lives in sometimes; and that distant line all dotted along with trees as far as you can see, is the high-road from Elsinore to Copenhagen, lined with fine trees like that the whole way; and there, the farmers are reaping the rye-crop; and there, where the fields are green, is the wheat, not quite ripe yet; and there, are the buoys to mark the submarine telegraph to Sweden.”

We watched the line they took, and then inquired, “What is the name of that island on the right, with the old castle on the highest point looking over to Denmark?” “Oh! Sir,” groaned he from his inmost soul, “that is Hveen, Uranienborg with some men, and it belongs to Denmark no more. It used to be ours; and that large house, the castle you speak of,

is where the learned Danish astronomer *Tyge Brahe* lived, and observed for twenty-five years. There he was graciously patronized by the Danish King Frederick II. Yes, and what is more, the happy man, the great lord, was honoured by a visit in 1586 from Queen Sophie of Denmark. Her Majesty came with all her company; and it was there, in that old castle, when she had wondered at all the mighty instruments for finding out the courses of the stars,—there were no telescopes then to look though and bring things near, but the heavenly machines were very big and heavy, and curious for all that,—a great storm arose, and the Queen was unable for three days to return in her royal galley. So then her Majesty seated herself in state, and *Tyge Brahe* brought in his excellent old friend the Pastor Vedel, with his curious books of ancient Danish ballads, and there they all sat reading and discoursing on the chivalrous chronicles of our olden times; and the damsels of the Queen's train learnt them by heart; the songs of the great battle of the Lena, and the fights of Hero Hagen, or those true tales of 'the daring deeds of Brunhild, or Siward with eyes like the morning star, and the faithful ship of Ungen Ranild.' Ah! Sir, all this glory of the Danebrog took place in Hveen; and yet they gave it away to Sweden, Sir, in 1814; and that," he added bitterly, "was when they gave away Norway too, and took it from Den-

mark, though she had had it so long." At this the pilot took a turn across the deck, and looked awhile over the side for some invisible land-mark, but yet was not altogether calmed when he returned to us. Nevertheless, he had nothing to say against Sweden herself or the Swedes in the transaction, but rendered the highest praise both to that nation and its Government.

Continually, as our steamer progressed at the rate of some seven to eight knots per hour, new scenes presented themselves on either side of the narrow and tortuous channels we were passing through, and appeared as though a moving panorama was being unrolled before us. By noon the towers of Copenhagen had thus floated in sight, decorating with Liliputian fretwork the thin blue line that skirted the southern horizon of a broad and placid bay, one of the larger reaches of the Sound, which we were then entering. The Town-Hall, University, Observatory,* and various churches were pointed out one

* "The first permanent observatory in Europe was that of Copenhagen, called the 'Astronomical Tower.' During the youth of King Christian IV., when the reins of government were in the hands of his tutors, Tycho had been banished, and Uranienborg had fallen into ruins. But this enlightened monarch, at a more mature age, and at the advice of Longomontanus, the distinguished pupil of Tycho, desired to repair the wrong committed towards science, and revindicate to his country the glory of efficiently patronizing astronomy, a glory which Denmark has preserved up to our own days.

after the other, and more particularly the Dom Kirch, —the Church of the Trinity in some books,—whose steeple, the highest of any, is, in spite of the outside road by which Peter the Great drove to the summit, one of the most slender and elegant of the whole.

Gradually all these faded away again into the distance, and hour after hour we continued, thanks to the untiring screw propeller, to cleave our way

In 1637, on the 7th of July, the King laid with his own hand the first stone of the new Observatory, and thus offered to contemporary princes a noble example for their imitation. This building was not entirely finished until the reign of Frederick III., in 1656, when the Observatory had lost its first astronomer. Longomontanus had already, 1642, imported from England a fine telescope, which magnified one hundred times, and this was the first telescope established in a permanent observatory. Distinguished *savants* succeeded Longomontanus, and without interruption down to our own time, and among them the first rank is due to Olaus Roemer. He took the direction of the Observatory in 1681, continued his labours there until his death in 1710, and had the eminent merit of entirely reforming practical astronomy, introducing into it instruments entirely different from the ancient ones, viz. the meridian transit, the meridian circle, and the prime vertical transit. Unhappily, twenty years of his observations, or those subsequent to 1690, and those of his successor Horrebov, perished in the great conflagration which in 1728 destroyed a large part of the capital. This is one of the most decided losses which astronomy has ever experienced, and it can hardly be repaired by time. Nevertheless the influence of the Observatory of Copenhagen on astronomy has been eminent. The constructions of instruments invented by Roemer are generally received, and the incomparable perfection of modern astronomical observations is based in the carrying out of the ideas of this *savant*.”
—F. G. W. von Struve.

smoothly on, still passing through groups innumerable of vessels of every size and rig, mirrored in the tranquil water; the songs of their crews spreading far and wide in the peaceful air, under the pure azure sky and dazzling sun.

Thus it was until at Drago, with its beach marked by boulders that have come from hills far out of sight, the gentlemanly pilot who had now safely conducted as through all the shallows, left in a grass-green sailing boat, with black gunwale and brown striped sails; and then the 'Edinburgh' fairly entered the Baltic Sea.

There, though at first for some hours skirting the southern shores of Sweden, the good ship ran us, after a time, far out of sight of all land, and had even changed our water horizon several times before the sun began to set; and when he did set, how gloriously, in orange and purple! And while the ever-whirling screw still continued to propel us further and further into that wide expanse of this Mediterranean of the north, the long-living chastened glow of a hyperborean twilight kept us constantly on deck, to enjoy an evening as enchanting and saintly as under an Italian sky, and a horizon as unlimited as ocean itself, but with a ripple less marked than in Grecian seas. Thus, therefore, on the elevated deck we both remained gazing and admiring until one star came out after another, and indeed mid-

night at length arrived, before either the last of the twilight had disappeared, or any chill of the night air was felt.

A charmed region all ! There, thought we, to the north lies the land of Gustavus Adolphus ; and there, to the south, is the coast on which “amber is found ;” as even the most prosy of our map-makers takes occasion to enter in every atlas. But we could not have believed the Baltic to be altogether thus without actually entering it ; and even having done so, we could not understand it all, notwithstanding that those 5° of warmth shown by our water thermometers above the temperature of the external ocean, might have prepared us for some remarkable consequences.

On and on for two days more we ploughed our way eastward through the Baltic, with horizons generally uninterrupted, or if slightly broken, merely by some low island, with nothing but the church and lighthouse conspicuous, perhaps only a buoy, which, with a little fluttering flag, was not to be recognized except with difficulty amongst the changeful wave-tops ; and marked, we were informed, a group of rocks or a shoal some five feet below the surface of the water and twenty miles from the nearest land : appalling danger to think of for those who are toiling here in dark autumnal nights !

During these two days the weather again became more stern ; the west wind perpetually blew stronger, and at last raised a very respectable sea, in which we could again, as outside the Skager-Rak, try the qualities and powers of our nautical instruments. The water, too, was becoming continually colder ; *because*, said the sailors, it was more fresh.

The water *was* more fresh ; of that there could be no doubt ; and every successive observation since quitting the North Sea invariably indicated a less degree of saltness than its predecessor. This sort of observation, indeed, usually so samely and monotonous on ocean voyages, assumed on the present occasion a power of progressive change that kept us all on the alert.

Thus from the 25th of July, when the hydrometer floated so high as to have nearly all its stem out of the water, it had by the 28th of the same month sunk so low down in it that we could hardly get a bucket on board deep enough to allow the instrument to swim therein without knocking against the bottom ; and from marking 25·0 in the Sleeve, it came down successively to 19·5 in the Cattegat ; 6·5 in the Sound ; 5·8 after entering the broad basin of the Baltic ; 4·8 opposite the Gulf of Bothnia ; and and 4·2 and 3·5 as we gradually drew up the Gulf of Finland.

Here, too, the temperature of the water sank to

its minimum, 59.8° ; and symptoms of approaching Russia were visible before night; that is, sails became frequent on the horizon; many a large Yankee barque scudded by, with patent double topsails and gallant spread of well-hauled canvas; and then, in the last lurid light of the windy evening, there came steaming up against the full force of the gale, a large Russian frigate; a transport followed in her rear, and signalling incessant was going on between the two.

By next morning (the 29th of July) the saltness of the water had decreased to 3.2, but the temperature had begun to rise; and soon after the Russian coasts became visible as long, thin, grey-green lines.

While earnestly gazing at this first apparition of that region of plain country, the sky instantaneously darkened, as it became rapidly overspread with brown and black clouds hastening up against the wind; a rift was then formed amongst them over the eastern horizon, and through that opening, while by an unearthly yellow light we saw there banks upon banks of distant knotty clouds glowing in a sunshine most remote, and below, the fringing line of Russian land, just beginning to show its characteristic forest surface, the lightning suddenly began to play, pouring rain to fall, and the wind to whistle loudly through the rigging, as it lashed up in a mo-

ment milk-white crests on all the waves, that were now grown black as night.

All this, however, was merely a squall ; and when it had passed over, we found ourselves opposite the Tolbeken Lighthouse, in water whose temperature had increased to $62\cdot5^{\circ}$, but whose saltness had fallen to 1·5, and was therefore, to ordinary taste, very tolerable fresh water. Then moreover we saw Cronstadt right before us, at the southern edge of a long, low, barren-looking island ; high-hulled ships in front, grim red and brown buildings behind, and above all the rest, a white bell-tower and a gilded dome !

CHAPTER III.

CRONSTADT FROM THE WATERSIDE.

“MAKING land,” a proverbially exciting incident at sea on long voyages, did not lose anything of that character on the present occasion, even though our run had been short.

Perhaps it arose in some measure from the land now made having lately proved so hard a puzzle to our naval men, that the announcement of Cronstadt in sight produced an evident sensation in the minds of nearly all of the crew; but whatever the cause the result was certain, that as the ‘Edinburgh’ slowly drew up to the anchorage her men gradually accumulated in expectant pictorial groups about the fore part of the ship; not talking much, but earnestly gazing, and each one apparently cogitating over, in his own style, the realities of the scene before him.

The west wind blew briskly behind us, the air was clear, and magnificent banks of bright cumulous clouds in the east, illumined there in full like ranges of snowy mountains by the now declining sun, brought out into striking relief all the salient points of the panoramic shore we were approaching. But first we had to pass one of the high-hulled ships already mentioned ; and when we did pass it, and close by, lo ! it was a man-of-war, with all its guns pointed direct upon us. A little further on there was another similar ship, on the other side ; then there were several steamers, with cannon of more than usual size ; and,—while large men-of-war boats, full of dark-visaged men, directed by white-capped officers, pulling an immense number of double-banked oars were passing silently to and fro over the light-green water, with its short, crisping waves,—the red and brown buildings we had before noticed gradually detached themselves from the beach, and stood confessed the granite forts so much spoken of a few years ago.

Neat and prim, perfectly new too, they looked, without a soil on their light-pink colour, and without a single mark of decay or injury to spoil their effective architecture ; and yet there was something about them that told indubitably that they were really composed of Cyclopean blocks of everlasting granite, and that their three-storied windows were

embrasures of large guns, a fourth tier of which very visibly formed a threatening coronet round the top of the massive walls.

Five such forts looked us in the face, and more still are building on every available corner, or even suitable shoal and sandbank.

We had scarcely finished gazing at these stone batteries before we were wafted past two three-deckers, also broadside disposed to us, and teeming with fighting men ; and finally, when we at last came to anchor just outside the merchant mole, where we could well see the dense forest of closely-packed trading ships inside, the characteristics of the scene were still on the whole more warlike than commercial. Guns, guns on every side. To our right a long pier, with guns and loopholed granite buildings, and on our left a small island, with bomb-proof barracks and another battery ; in the distance, Fort Menzikoff, Fort Cronslott, and Fort Alexander, with steam-frigates ; closer by the giant hulls of two 120-gun ships, and behind us a screw man-of-war, more Brobdignagian in her proportions than even any of the preceding, and said to be the so-called "frigate," built by the Americans for Russia, and always maintained in readiness for instant action, with a large array of mortars and Paixhans guns and troops of armed men.

Close about were several peaceable steam-ships,

like ourselves, and country lighters with country goods; yet behind these were ever to be distinguished the truncated masts of war-ships laid up in ordinary, or the works of the steam-frigate department, or soldier's barracks, or something or another in the fighting line. Before however we could note them all, a new subject thrust itself on our attention: the custom-house officers had come on board!

About a dozen military-looking men came tumbling up the ship's side one after the other,—we thought there would never be an end of them,—in a green and gold uniform chiefly; some of them with many orders, stars, crosses, medals, etc., hanging in a horizontal row across their breasts. Their first care was to seal up everything on board. They sealed up the hatchways; they sealed up all the loose bales of cotton with which the deck was covered; they sealed up our portmanteaus, carpet-bags, and even wanted to seal a lady's reticule. By "they," we mean that two poor, hard-working men, in the oldest of long grey coats, did all this; tying up everything with an ill-spun string, and then affixing a piece of soft red wax, which took the impression of their seal cold. The rest of the party, *i.e.* all the great men, drank beer in the captain's cabin until the work was reported finished. They then all made off to another arrival, leaving in the 'Edinburgh' only one man, whose duty was said to be, to

watch everything on board our ship as long as she stayed at Cronstadt, and never go to sleep day or night.

If ever mortal man was really thus kept for whole weeks without knowing anything of Nature's sweet restorer, surely it was this unhappy creature, suspected, by the way, of being a Pole. His complexion was withered and brown ; his cheeks lantern-jawed ; his eyelids scarcely opened, and were quite lost in the great crow's-feet, which diverging at the corners of his eyes, actually spread nearly all over his face, wrinkled up the sides of his nose, drew deep lines down behind his tangled moustaches, even passed over the jawbone, and finally made the skin of his bare neck hang in folds, until lost beneath a green uniform laced collar, whose tinsel was just visible as it peeped above the top of the long grey coat that enveloped his whole figure, from his neck down nearly to his heels. A flat uniform cap, above the sides of which a pair of large ears rose like intended ornaments, and whose peak came down so low as nearly to cut off all the light of day from his eyes, completed the upper man of our watchman, who forthwith began his monotonous peregrinations.

Presently another large boat arrived, and another invasion of military-looking officials took place, to examine, it seemed, whether their predecessors had faithfully performed their duty. There were some

amongst them with unusually fine coats, and a superabundant number of orders ; requiring proportionate beer in the cabin while the seals were being examined by their underlings. This work, however, at last completed, their leaders rose from the table, and kindly informed us that at twelve o'clock the next day a third set of officials would come to us and give us freedom, by taking off all the seals again ; but that if any of these badges were then found injured, or the strings broken, there would be a fine of innumerable rubles, with perhaps ulterior consequences.

Just a little peep into the private baggage had been requested, and had not been transgressed ; for a hand was merely inserted into each case, and the contents declared quite according to rule, until indeed a small parcel was stumbled on, that excited quite a shriek of triumph, it look so like a paper of cigars. All the military force immediately gathered round to assist at the opening of this expected legitimate prize ; but what a change took place in all their physiognomies, when the contents were found to be only little wax candles, white and pink ! The discovering official was not merely or simply mortified, but betrayed some much deeper feeling. What did it all mean ; for he looked as if self-accused of sacrilege ; and after this scene we were troubled with no more questions as to our motives for visiting Russia ?

Evening had now arrived, officials' boats became scarce on the water, and at last entirely disappeared; but still a steamer in our neighbourhood actively continued its loading. There were two or three country lighters lying alongside her, and the rattling steam cranes were every moment hoisting out of them huge bundles of hemp. Strange sight these "lighters," half Dutch galliot, half Chinese junk: with one tall mast in the bows, and a little one over the stern, while triangular flags floated from mere sticks, lashed obliquely across near the summit of either. Little paint about them had the hulls, except for some imitation windows or bulls'-eyes at either end; their bulbous, curved sides generally showing the bare wood of which they were built; and most picturesquely, for being composed of birch-trees split in two, with every alternate plank exposing first the flat cleft side, and then the original round side, they produced at a short distance, the rich effect of carved and fluted surfaces.

But the men on board these country boats, they were the sight; for they were genuine specimens of "*mouzhiks*" at last, *i.e.* real Russian peasants: examples of the mass of the people, unsophisticated by Government, and unadulterated by towns. What an intense nationality did they instantly give us an idea of: a people who scorned conventional notions and Parisian tailors, and everything that we are accus-

tomed to think most necessary to daily life in Western Europe. Deep-set eyes had they, short straight noses, and large ears; they wore small flat caps, and exhibited huge moustaches and beards, with long flowing hair all around. Then their figures were enveloped in long bulky sheepskin coats, worn fur inwards and skin outwards; while their feet and legs, as high as the knees, were encased in magnificent boots, which though adorned with the quasi-dandyism of innumerable transverse creases or plaits, yet did not conceal the admirable turn of the strong limbs within.

Verily, a well-booted race, in-so-far the “*εὐκνήμιδες*” of Homer, with a strong dash of the Scythian. We were sketching down their characteristics, when the sky again suddenly darkened as in the morning, the wind blew, the rain began to fall, and when we retreated to the cabin, a deluge poured down with accompaniments of vivid lightning and loud thunder. This squall lasted for some time, and when at length it had subsided, we found even the long northern twilight nearly exhausted, the loading steamer resting at last from its labours, and the classic “mouzhiks” enjoying themselves in their own free way. There is still a law,* we are informed, in

* Dr. Cook, who in 1720 describes Cronstadt as “being, notwithstanding its infancy, a port of no small strength, great safety to shipping, and good policy,” states that “no persons are allowed to have

the port of Cronstadt against anything in the burning way, even down to a cigar ; but our new acquaintances, in the unrestrained liberty of a stormy night, were actually making open fires on the decks of their lighters ; and they heaped on the wood too most liberally and got up brilliant flames that flashed and forked in the gusty wind. So there they were, these broad-beards ; and it was pleasant to see how some of the fraternity as they sat on heaps of billets ready for more burning, stirred the pot from time to time with regal gravity, while others lay down beside them, and slept apparently with satisfaction in the breezy air, confident in their sheepskin coats and big boots.

At this moment a cry of distress arose on board our own ship ; one of the seals was reported broken : a seal on a hatchway too, and there would be a hundred rubles (three hundred shillings) to pay. How had it been done, or who had been the offender ? No one knew ; and certainly no real fraud could have been committed, for the padlock still held, and the hatch cover was heaped up with heavy goods lying over it. But the law is to the letter and its execution without fail. On examination, we found it was not so much the seal itself, as the string on which it was stuck, that had given way ; for this had been tied

fire or candle on board any ship in the harbour. A candle is allowed in great need ; but the candlestick must be placed in a vessel with water."

over-tight, and what with shrinking when wetted by rain, and straining when the ship rolled in the squalls, fracture had ensued. So the cause being discovered, a little more yarn was produced, and a sailor's skilful thumb and finger very soon twisted it into, and cleverly amalgamated it with, the two broken ends of the string. The wizen-faced watchman, to be sure, was all this time occupied in the steward's pantry taking off a glass of rum, so that the affair was very easy; but every one on board had got rather a wholesome fright about risks to the fastenings; nay, amongst others, the cabin-boy, nervously anxious to preserve the soft wax on two of our portmanteaus from all possible external injury, must needs take the trouble to lay one package over the other, seals inwards. The result of this was simply that both seals got squeezed perfectly flat, lost all trace of the double-eagle impression, and opened up new fears of fines and penalties to come.

Again a thunder-squall came on, and all hands had to beat a precipitate retreat; and most of them did so for good that night. We went out however once more, when the storm had blown past, and saw strangely heaped-up masses of blue and purple clouds in the north-west, while below them a narrow stripe of lurid, almost scarlet sky, brought out into startling relief several great black hulls of distant men-of-war, resting, as it seemed, on the very edge of the sea.

Still again the wind gave premonitory symptoms : rain, thunder, and lightning followed ; and when that had once more passed away, we saw the twilight, then due north, forming the luminous background of a grim array of black cannon at the end of the mole. There was no getting away from those war-like reminders ; and when next morning broke, the first thing that greeted us from the position into which the ship had swung, was the huge American frigate “dressing ;” and with its lengthy hull and lofty spars filling almost half the sky from our new point of view.

Although the west wind was swift and tumultuous, half a gale indeed, all that forenoon, the long and broad black men-of-war’s boats, with their closely packed rowers, moved backwards and forwards as dully and methodically as ever, like mere propelled masses of lead ; but the smaller private boats were tossing about in lively ways among the shipping, and their rowers or steerers were ever manœuvring, by standing up, or holding up a plank or such other device, to make the most of the wind whenever favourable in direction for them. There were two “ mouzhiks ” in the warmer part of the day who had doffed their sheepskins, and now stood forth in their pink shirts, worn outside their trowsers : huge, baggy, Turk-like affairs, of a dark blue colour generally, reaching only to the knee, where they

entered the tops of the big boots ; those superlative understandings which seemed to be *de rigueur* with every one native.

Some of the boats were gaily painted in white and green, and with arabesque patterns, and had high ornamental sterns ; but they were carrying such creatures as merchants' clerks about. Wherever on the contrary, there was a sheepskin-clothed man with a flat cap and a huge beard of light brown hair covering half his face and descending to his breast, he was in a boat wholly unpainted and of a form that recalled to one's mind the ancient canoes of skins stretched over a wicker-work frame : for the lines of such a boat were full and flowing, even to bulging out in the middle, while the ends were drawn up, especially the fore part, the whole of which was actually and altogether out of the water, so that the curved keel acted the part of cut-water and the stem that should have done this, was up in the air and even inclined backward, rather than as usual or universal elsewhere, forwards. The effect, however, was decidedly graceful and telling ; there was not a single straight line in the whole construction, nothing that spoke of the rule or the plane or of man's prosaic work ; so that one of these Ingrian boats might verily have been shaped by Nature herself after constructing her nautilus, so full of pleasing curves were they, and so harmonious to the

form of the billows they tossed lightly and airily amongst.

How long we should have had to admire only these boats, or to mark the visits of the customs' officials to each newly-arriving ship, and to count the number of bottles of beer handed to them on leaving each, we know not; but happily our astronomical friends at Pulkova had thought of us, and kindly sent their Librarian and Linguist to welcome us to Russia; and he came off about two o'clock, accompanied by the Astronomer of Cronstadt, to intensify this welcome to a foreign land.

These gentlemen immediately led the way on shore, and we followed with the captain in his boat carrying all our smaller luggage. He steered accordingly straight to a narrow opening in the mole, where stood a loop-holed granite building, at whose narrow end we had been looking all day long; and so clean, so pink, so pretty it was, that we were indeed greatly astonished, when in a few minutes more we had turned the corner and came abreast of the building,—to find it a long and roomy fort, where the mere musket loopholes of the end were changed into yawning embrasures for cannon of large calibre tier above tier.

This frowning fabric passed, the merchant basin was entered, but not before we had floated under the stern of a line-of-battle ship inside, an enormous

vessel and in fighting order ; but that was not what struck us most at the time, it was her name that produced an impression really somewhat staggering. Well and what is in a name? or what *was* her name? That was precisely the question we asked of the captain ; and he shook his head, and confessed his utter inability to read the six or seven letters composing it, and so did the steward, and so did all the men in the boat ! Not because the writing was small, for each letter was a foot high and we only thirty feet off ; not because they were indistinctly marked, for they were bright gold on a black ground ; and not because they were over-loaded with ornamental flourishes as in modern imitations of medieval church legends, for they were as simple and geometrical as the capitals of the Roman alphabet,—but they were such letters as on the whole we had never seen before, and we felt excessively subdued. True, the tempter was at our ear in a moment, “Are there not crowds of men in Great Britain to keep you company in your ignorance? can one in a hundred thousand there read Russian? and do not the learned despise it, though in despising it they despise what they know very little indeed about? do not the Universities ignore it? and most literary men refuse to give it any place as a treasure-house of human thought, those same literary men who could not support any examination in Russian letters?”

Let a man, if you will, be accounted unworthy of being received into polite society, if he is not fluent in French ; and let his learning be esteemed shallow, if he is not deeply versed in German ; but Russian, what well-bred man need trouble himself about such a language ? Keep yourself ignorant of it, and say that they who speak it are barbarians and beneath your notice." Yet when we thought on the place of Russia in history, and her growing empire, and her sixty millions of people held together and knit into at once a larger and firmer nationality than our earth has ever yet seen, and if not by means, still through the agency of that language, we could not but feel that we had an immensity to learn, and an important part of our education to begin in this country. So we persisted in taking some shame to ourselves, even as little children first entering school.

Swiftly glided our boat through the smooth water between the dense ranks of merchant-ships in their enclosed basin, and when at last we jumped ashore near the "droshky"-station, there was no leisure to note the curiosity of those miniature four-wheeled vehicles and their long-robed drivers,—for the superintendent assured us, that though we should use all expedition in driving to the St. Petersburg steamer pier, we could only arrive in time to be just too late. But the captain was determined that it should

be otherwise ; and while we started off in one droshky, he and our Observatory friends took another, after piling the luggage in a third ; and then all set off in a race down the broad roads of Cronstadt city, with colonnades of public buildings and broad spaces laid out with innumerable iron cannon on either side.

It was a glorious ride, the vehicles being so well matched that sometimes one got ahead and sometimes another, and there was plenty of room when they liked it for all three abreast ; presently however the captain's driver turned down a small connecting street to pursue his way along another road parallel to ours, thinking thereby to get a great advantage ; and eager was the looking-out at passing every following connecting street to see who was in advance. In this manner, just as we had come at last to the end of the great red public buildings which had made so many blocks of separation between the two parallel roads, and as we each turned a corner to gain again a common line of progress, suddenly our man began shouting triumphantly, "Dobre ! dobre !" and impelled on his horse more furiously than before, ever and anon looking back with a fiendish smile, and shouting out again, "Dobre !"

What can he mean by "dobre," thought we, and turning ourselves half round as well as we could on

our few inches of seat, occupied by two though with barely room for one and violently oscillating on its grasshopper springs, we were distressed to see the other droshky overturned, and all its former occupants sprawling right and left in a surface of mud. Vainly we besought and insisted on our driver stopping, that we might go to the assistance of our friends; he did not understand a word of English, and merely drove on more ruthlessly than ever, and grinned more satanically, repeating his constant cry of "Dobre! dobre!" until we had dashed through an archway in a fortified rampart, and then went bowling along a wooden pier at the rate of twelve miles an hour, stopping at last opposite the St. Petersburg steamer, full of passengers and impatiently ringing a bell, and vomiting clouds of steam.

Then indeed, we could dismount, and immediately began to retrace our steps to the scene of accident, cheered however, very soon, by seeing the other party driving up as if nothing, except the soiling of their garments, had occurred. They were truly astonished, they said, in a moment, in an insensible space of time, to find themselves all lying flat on the ground, when they had been galloping high over it the instant before so bravely; but the mud was deep and soft, and no serious injury was done.

What does "dobre" mean? we innocently inquired. Oh! did the rascal cry "dobre?" why that means good, an excellent joke, capital fun! A villain certainly. Yet on subsequently speaking of the affair to a Russian friend, he tried to assure us that the man could not have used the word, for it was not the right word for good in that sense, and implies rather a species of moral excellence and spiritual righteousness. We persisted, however, that "dobre" was the word, and then a bystander suggested that the man, a driver in Cronstadt, might have been a Pole, when immediately every one present agreed that if that were the case, it was enough to account for any enormity.

In a few seconds more the steamer started, and we found ourselves in company with the Librarian from Pulkova, amidst a remarkably quiet and orderly assemblage; the ladies like fashionable ladies of any country, the gentlemen almost all officers, with their uniform caps encased in a white summer covering; the steamer itself an excellent vessel, fittings and adornments first-rate, the mere bare deck carefully painted yellow, and numerous little yellow footstools for all the ladies, and a nice canvas curtain round the lower and after part of the paddle-box next the water, to keep in all the splashings. The speed too was satisfactory, and as St. Petersburg was not yet in sight over the water horizon in front

of us, we turned to admire the coasts on either side some four to five miles distant.

Well wooded they both were, and the southern showed the white gleaming mansions of Oranienbaum, Peterhoff, and Strelna contrasting well with the greenery. Flat, desperately flat, we noted all the country; its coast views therefore only thin horizontal lines; lines thin, but so long, and indicating over again the almost infinite flatness; while its tremendous extent and unbroken uniformity were remarkably imaged in the clouds of heaven above, the only sufficient mirror. On the Finland side the vapour-masses were heavy, forming continued banks of cumulostrati; but such long, long ranges of these clouds, one too behind and below the other so continually, small by degrees and beautifully fine in the distance and that distance such an interminable distance, we certainly never saw the equal to it before. Over the southern or Ingrian coast, on the contrary, there was much blue sky and clear bright air, interspersed however with true cumuli clouds having most characteristic flat bases and apexed summits. Evenly were they spread through the atmosphere and in nearly perfect uniformity of size; but the grand perspective under which they were all seen, made them so astoundingly multiply in the far-off air, in a truly magnificent remoteness which appeared never precisely to

terminate and showed them at last numerous, and, so to speak, small as grains of sand on a distant sea-shore,—that we had thus effectively in the sky a sort of meteorological reflection of the majesty of Russian plains.

“Oh, look there!” exclaimed my wife; and all along the eastern horizon we saw white towers, like minarets standing above the water’s edge, and one of them higher than the rest, and pillar-like, with a head of gleaming gold. St. Petersburg! Yes, indeed; but what is that tall tower, outdoing our own monument of “Fish-street Hill,” with its golden mass of flame on the summit? is it the Admiralty Tower, so admired by Kohl? No, that is surmounted by a spire. What can it be? Rapidly the trim and perfect steamer decreased our distance; the mirage, which had vertically stretched every summit of distant building, lessened; the golden gleam enlarged to a dark purple head with a spot of gold on one side, and before much longer we concluded that the dome of St. Izak stood before us. But where are the other golden domes, and all the blue and green ones we read about? everything else is plain white. Presently however we suspect gold, though faintly, gleaming on another white steeple; then another; then twinkling scintillations are seen under the Izak dome; and while that shines steadily like a planet, its four cupolas are twinkling as actively as that

little star we have all heard about in the child's poetical address.

It would be wearying to the reader and not very instructive, to have all the successive gradations in appearance, that minute after minute brought forth, too literally and particularly described; suffice it then to say, that when we approached *near* enough, the promised colours appeared; then ranges of lower buildings were seen, forming a horizon-line for the higher; and while we were still admiring domes of various shapes, and tall thin spires covered with plates of gold and glistening in the level sunshine like huge new and bright pins rather than anything architectural, the steamer, some two hours after leaving Cronstadt, had actually entered the mouth of the Neva. Innumerable small merchantmen were around, almost a Thames-full of them, but with ample room and clear wholesome water. The left bank, *i.e.* the bank on our left, was lined with rank upon rank of sailing-vessels, with very many steamers distributed amongst them, and white palatial buildings appeared behind; the right bank was not very different, but with addition along a considerable part, of well-armed gun-boats, and hulls of men-of-war, and the gigantic roofs of the new Admiralty; while continually new prospects of magnificent reaches of blue water, and interminable lines of brilliant city buildings opened up before us.

In the midst of all these was the Cronstadt landing-pier, and where we were further gratified by the kind attendance of more astronomical friends, whose able assistance soon provided us with the necessary conveyance, and set us speedily driving for the Imperial Observatory of Pulkova.

CHAPTER IV.

FIRST IMPRESSIONS OF ST. PETERSBURG.

July.

THE mere sensation of rapid movement, when we are sitting at ease in a carriage with good horses, is in itself so vastly agreeable a *summum bonum* on earth, we believe with Dr. Johnson on one occasion, that we might perhaps, in this, our first drive through St. Petersburg, have been inclined to form a rather too favourable opinion of everything that met our view. The evening moreover, was delightfully warm and bright as many a midsummer's day in Scotland. Everything therefore wore such joyous colours, as precisely to bring on that mood which an esteemed and venerable friend, who cares only for accurate and rigid statistics, had warned us most emphatically against, as being, he insisted on it, the most improper in which to attempt to put pen on paper.

It was with difficulty though, that we could now swallow the wholesome correcting lesson, which taught us to consider all pleasant first impressions as nothing worth, and a weakness by no means to be indulged in. We were unwilling perhaps; and was it much wonder? for who is there who does not attach some love, if not value, to *their* first impressions of anything great or noble? Does not the merest, even first glance at a place, or an individual, often instinctively reveal a world of private history and information, which, if on a second view we are inclined to modify, we yet find ourselves gradually returning to on subsequent occasions, after the reaping probably of much more extensive experience?

If too, on this particular day, July 30th, we were favourably—one-sidedly, says Mentor—influenced by the pure transparent air, azure sky, and brilliant sunshine up to a late hour; were not all these facts, and St. Petersburg's own? Shall we wait therefore, rebellious thoughts would now and then suggest, until future days and further trials may have brought us into some of the inevitable petty troubles common to any locality, and then sit down, in the sere and yellow leaf of our short travels, to expend all our accumulated vexation in writing a "full, true, and particular account of this miserable country"? Shall we act thus, or shall we at once without further ado give way inconsequently to whatever expressions are

called up by an occasion that to us can never return, viz. a first view of Russian land ; and be afterwards proved by some cold-blooded mortal, to have been somewhat incorrect, or incomplete ?

Oh, that will never do ! We are of course bound to be always dignified and sedate, perfectly impartial, and determined not to say anything or express any opinion until after having heard and read all the reasons that can be advanced against, as well as for. So it seemed ; but these overwise resolves were upset in a moment, as we drove over the Nikolayevski bridge and along the southern shore beyond ; for it was not in human nature to resist bursting out in admiration at the broad clear water of the Neva, flowing on, flowing on in a ceaseless tide, thickly lined on either hand with vessels of traffic of varied build and rig ; and yet showing so noble a breast of unencumbered stream along the centre.

We could not be silent, and first pointed out one feature, then another as glorious. “ Oh ! look too at these granite quays,” was often an involuntary exclamation ; “ the blocks of which they are composed, can few of them be less than eight to ten feet long, and rosy-red all of them, like the rock-hewn temples of Petra.”

“ What magnificent ranges of white palatial buildings on the further side of the river ; and far up its course, see long bridges of boats spanning the bright

stream; and only look at those windows of the houses on the 'English Quay' we are now passing under! Why every one of them is filled with beautiful plants like a greenhouse, and almost every other one is supplied with a well protected glass-encased thermometer. Oh! do admire those bananas among the muslin curtains, and the flourishing cacti in full flower. There too is a South African aloe with its spike of scarlet blossoms; and did you ever see such magnificent euphorbias and myrtles?" "No indeed never so far north, or within very many degrees of it either; and never anywhere in a drawing-room."

Each window we passed had a new display of exotic treasures; and large crystal panes, in shapely framings of brown wood with brass-bound corners, allowed the brilliant solar illumination, shining straight into the rooms, to light up their botany most effectively.

But not long could we dwell on any one object of interest, for in a few moments the Admiralty Square opened before us; and there was the already classic statue of Peter the Great on his horse ever rearing, while the monarch surveys well pleased the rise of his broad city of Ingrian lakes and plains.

Beyond this, eastward, rose the great pile of the Old Admiralty, with its fine spire, sharper and finer than any Gothic steeple that exists in the West; and plated all with burnished gold. On our right was

the long frontage of the Senate House, with bronzes and colonnades of Corinthian pillars above, and soldiers' guard-houses below ; next came a well-planted boulevard with a triumphal-columned entrance, and then we were rapidly whirled along across an open paved space, a plain in itself, until we passed close under the very recently finished cathedral of St. Izak. What grand columns of red granite were there, each in a single block, with a surface that shone like glass ! Bronze sculptured doors and statues were abundant, but the granite steps running round the whole building, each row three and a half feet high, in enormous blocks, and polished over the whole extent as truly and brilliantly as if they had been little jewels only,—these chiefly excited our admiration.

Little more than a passing glance of all this could be obtained, and we had scarcely driven sufficiently far away over the immense open space surrounding the church on every side, to see the glories of its golden dome rising above the porticoes, before we almost touched the newly-erected statue of the late Emperor Nicholas I. Armed *cap-à-pie*, though in his own modern style, the disciplinarian Tsar is mounted on a golden horse that prances, to all beholders, on the top of a lofty pedestal, a gorgeous mixture of white and red marbles, with grey granite, jasper, and gilded bas-reliefs.

More grand buildings passed in review, each worthy to be called a palace, ere the end of the "Izak Plain" was reached; then crossing a bridge, and skirting one of the canals so characteristic of Peter's town, with splendid granite walls and floating numerous well-filled barges, we entered a long and broad street, the Demidov Koni, leading nearly south.

Here objects of more homely interest multiplied every moment. Look at the shops, we could not help exclaiming, with half their contents painted outside them in life-size portraits; and the strange vehicles, with long axle-trees and stays outside them, and the great arches over the horses' necks; and still look at the plants in the windows,—not even the smallest grocer or baker or shopman of any trade, but has every square inch of the glass in his sitting-room filled to profusion with geraniums, heliotrope, aloes, and myrtle. Ay! but note the people also, well-grown men all of them: stern and stalwart, with flowing beards, beginning from under their eyes. And what costumes! excepting the military, with their tunics and frequent large-caped, silver-grey coats, every other man wears a long red-and-brown dressing-gown, *kaftan* properly called, with a flat blue cloth cap, while most of the others sport pink shirts as an outer garment, but all of them indiscriminately tramp along in big well-shaped boots coming up to their knees. What queer creatures,

too, the women look, and how few are seen ! not more than one to every dozen men ; and then, poor wrinkled tawny-faced things, with a handkerchief tied tight over the head, a nondescript but bulky sort of gown, and the feet swathed in rags or stuck into the clumsiest and most dilapidated of shoes. Children nowhere. But what can those men be about, standing on the curb-stone, with their caps in their hands, and bowing and crossing themselves so vehemently ?

Presently we were driving through a market-place ; deep and black the mud in which the hay-carts their owners and cattle stood, and multitudinous the fruit-stalls loaded with currants, raspberries, cranberries, and, strange to say, cucumbers and water-melons—small and round both, but veritable and in overflowing abundance.

Then another canal, the classic Fontanka of Catherine II., was passed, with a granite bridge, the Oboukhov by name, adorned with granite kiosks ; then another long street was threaded, with its strange shop-signs and legends inscrutable to Western eyes ; then another granite-bound canal, the outer circuit canal ; and in the course of the lengthy street beyond, the Tsarsko-Selo Prospekt (and we had long since driven as far as would have taken us through and through Paris, from one side to the other, and through indeed any other city perhaps in Europe,

London excepted), we began to see an evident breaking down of the heights and masses of the houses, with unmistakeable symptoms of approaching suburbs. Wood-yards began soon to intervene, with their neatly arranged stacks of birch-tree faggots, stacks covering an acre at a time ; and then gardens, fenced in with wooden walls that were built in a rude sort of panelled carpentry ; while over these, in the distance, were seen an occasional factory chimney and many a gilded dome. Close by, on our right, was a large building where two Cyclopean bulls in russet jackets stood on either side of the gateway, drawing themselves back and tossing up their noses with infinite contempt at the sea of liquid mud in front of them ; and then, in a few minutes more we passed under a grand triumphal arch, eighty-five feet high, in bronze-coloured plaster enriched with sculpture : and with this we were fairly out of the city of St. Petersburg, with genuine Russian country before and all around us.

A pleasant sight we hoped it was for the horses, for away ran the road as straight as an arrow, and as level as a canal, right into the far blue distance, where the lines of green lime-trees with which the road was bordered all converged into a vanishing-point. The animals however made no complaints, and on we continued uninterruptedly, sometimes passing stray houses built of wood but painted to

resemble St. Petersburg still ; then a manufactory of pottery, then gardens, then a large convent with red enclosing walls, white interior buildings and numerous green domes of Saracenic cut and shape ; while continuously some opening allowed us to catch a peep of the country beyond : flat and extensive, all of it, as the sea, with a thin blue horizon-line generally formed by the edge of some far-off forest of trees, which appeared of mere Liliputian dimensions in the distance.

Next a railway crossed the road, raised, as far as we could see it,—and that was a very long way,—a uniform height of about two feet above the plain, neither more nor less ; the crossing being on a level with our own road, and defended by two great vertically-rising, zebra-painted levers, attended to by soldiers from their guard-house close by. Further on, a grand road branches off to Moskva ; but ours still kept up its full proportions, accompanied too on either side just beyond the lines of lime-trees, by two other parallel roads, where every now and then droves of gaunt oxen with crescent-shaped horns are seen, or country peasants with empty carts. Abundance of vehicles in our line also ; no longer indeed, now, the one-horse little droshky-carriage, but long-bodied *telegas*, half basket half boat-frame work, with the drivers usually lying at full length, fast asleep, and trusting everything to the patient intelligent horse.

By this time we had passed many of the imperial verst-stones, those grand structures of coloured marbles with which features are endeavoured to be impressed on the featureless flat; and, what we had not been equally led to expect, ornamental drinking-fountains for man, horse, and dog, in the most advanced style that any of the present philanthropic improvers of London or Edinburgh could desire to see established in their own cities. On the left of the road, too, we had noticed a mansion with many domes and a very ornamental chapel,—the Château Tchesme, as we afterwards learned; enshrined in the minds of Russians as the last stopping-place, on his way south, of Alexander the Amiable; and again of his corpse and that of his Empress, when brought back eight months after, for interment in the imperial sepulchre.

Beyond this point was a “German colony,” a village of emigrants from that land; their houses painted in Western style, but their children big-booted and outside-shirted *à la Russe*. More women were seen here; and a young lady was promenading in the soft evening sunshine in a large fur cloak, thick white fur from top to bottom and of enormous massiveness, that spoke its own volume of what the winter cold must be. More Russian still every moment grew the country: so extraordinarily flat; so blue-rimmed in the distance; the trees all so

green ; birches preponderating ; next firs and pines. We were never tired of admiring the birches, so delicate and graceful in their aspiring yet weeping foliage, and so innocent with their silver-white trunks glistening in the depth of the woods, or modest and coy among the rude and red weather-beaten trunks of Siberian pine.

Cultivated land now began to appear in curious narrow strips, running at right-angles to the road ; and after a few more giant verst-stones, and one or two more varieties of drinking-fountains, true Russian village houses began to show themselves ; built of round logs unpainted and nearly black with their weathering. More and more of them appeared, all log-built and tarnished by wind and rain, with small elevated windows and many of the gable-ends delightfully adorned with carving ; in some instances as light and airy almost as lacework, with a curiously wrought glory in the midst.

Very soon it became evident that we had entered the village of Pulkova. Before us then, winded along from east to west a long line of elevation, of some hundred to a hundred and fifty feet high, an old sea-margin of the Gulf of Finland. Presently our carriage was climbing the ascent ;* and after

* Up to this point, flatness supereminent had been the character of the country : not, however, the unmitigated marsh that had been expected, for, as already remarked, we were often charmed with

pursuing for a few hundred yards a side-road shaded by lofty birches with a few elms and firs, we opened on a well-kept lawn looking out nobly over all the flat country, and immediately found ourselves in

groves of trees and rich cultivation over large extents, and there had been a feeling in us, too, of being on firm, indubitable ground ever since crossing the last canal. This general impression has proved to be right; for M. W. von Struve has thus (in French) described and carefully measured the road:—

“The Moskva causeway begins in the interior of St. Petersburg, at the Oboukhov-bridge, on the river Fontanka, which separates here the third quarter of the Admiralty from the two southern quarters of the capital, those of Moskva and Narva. In a direction almost exactly meridional the causeway crosses the canal which forms the ancient circuit of the city on the southern side, a little beyond the third verst-stone from the Imperial Winter Palace. On passing at the sixth verst-stone the triumphal arch erected in 1858 in remembrance of the glorious campaigns of the Russian arms from 1826 to 1831, as well as the barrier, the causeway continues, always in the same direction, as far as the post-station of Strednaia-Rogatka, near the tenth verst-stone. Here the road to Moskva turns toward the left, separating itself from that of White Russia, which prolongs itself in the primitive direction as far as the seventeenth verst at the village of Pulkova, where comes to an end, on this side, the plain that surrounds the capital. At this place the great road is crossed by another causeway, which communicates between the town of Tsarsko-Selo and the châteaux of Strelna, Peterhoff, and Oranienbaum. In the southern obtuse angle, formed by the intersection of the two roads indicated, the hill on which the central Observatory is situated elevates itself to a height of 159 feet above the level of the causeway, at the point of intersection near the seventeenth verst. The great village of Pulkova belongs to the imperial domain of Tsarsko-Selo, which with more than two thousand inhabitants, extends from the sixteenth verst in a length of three and a half versts along the road to Tsarsko-Selo, and encircles the above-mentioned hill on the north-

front of the most splendid and well-arranged temple ever erected anywhere to the science of astronomy.

western side. It is this village which has transmitted its name to the Observatory.

"The centre of the Observatory is placed in the prolongation of the road which comes from St. Petersburg, on the very summit of the hill. The slope from top to bottom in this direction is nearly 6° . This descent being too rapid for carriages, caused the idea of a great road conducting directly from the plain to up on the mountain to be abandoned, and has preserved for communication between the village and the Observatory an old detour by means of a further portion of the causeway and a side road, offering a mean inclination of $2^\circ 10'$, but extending the distance between the Observatory and the seventeenth verst-stone from 0·58 to 1·15 of a verst.

"The following are the distances, carefully measured along the road between St. Petersburg and the Observatory, with their respective heights above the mean level of the water in the Gulf of Finland:—

	Distance in versts.	Height in English feet.
The Izak Quay on the Great Neva	0·0	5·0
The Cathedral of St. Izak	0·5	7·5
The Oboukhov bridge on the Fontanka	2·3	12·0
Canal of the outer circuit	3·7	
Barrier and Triumphal Arch	5·5	35·0
Palace of Tchesme	9·0	
Station of Strednaia-Rogatka	10·6	
Colony of ditto	12·4	
Village of Kamenka	14·5	
Post-station of Pulkova	17·2	88·6
Observatory of Pulkova	18·5	242·0

"The versts may be reduced to English miles, roughly, by subtracting $\frac{1}{3}$; more accurately by the equation of one verst = $\frac{2}{3}(1 - \frac{1}{176})$ of an English mile."

CHAPTER V.

PULKOVA OBSERVATORY IN SUMMER.

July.

THE morning after our arrival we chanced to ask M. Otto Struve, the able acting-director, in his eminent father's absence, of Russia's chief Observatory, if St. Petersburg were visible from his windows.

Immediately he took us into a balcony projecting from the drawing-room and said, "See, there it is; and if you come to this end, you may perceive the dome of St. Izak, just on the left of that tall birch-tree!"

A magnificent tree of that species rose up from the smooth green lawn immediately in front and below us; towering far above all the groves that skirted the declivity of the terraced neighbourhood, this birch projected its graceful stems, garnished with innumerable weeping branches and pendent leaves, apparently upon the flat extensive country beyond,

and cut sharply through the long and level aerial blue line that marked the land horizon. This horizon was forming at the same time a vanishing-plane for innumerable bright clouds, which, large and massive overhead, diminished in size but increased continually in number as they lowered in altitude, until at last they appeared only as closely-ruled horizontal lines, growing fainter and fainter and barely distinguishable where they joined the similar level markings of the grey and far-off Finland plains. A little short, however, of this interesting dove-coloured edging, we could perceive, and the distance was nineteen versts or about thirteen miles, a thin serrated white line running far right and left, thereby showing the breadth from east to west, though not the depth from north to south, of the modern capital of the Tsars; and close to a branch of M. Struve's tree appeared, sure enough, one bright golden patch of light, the glorious dome; of almost the intrinsic brightness of the sun, though in angle more like the planet Venus at its mean distance; while four little glistening points below, that were twinkling away actively like veritable stars of no sensible angular magnitude whatever, indicated the visibility of Izak's cupolas as well.

The steady planetary brightness of the gleam from the great dome was much increased in effect by the dark-purple hue of every other part of the

rounded metal surface, except that actually employed in reflecting sun-light at the moment. Even a moderate-sized telescope persisted in showing to us every portion of the dome excepting only the side patch of light, as being a dark rich purple, darker and darker, too, up to the very edge of the reflection. Well! we were not prepared for a uniformly and brightly gilded surface showing such excessive contrasts of colour and shade; but there it was, so we could not but confess it to be an arrangement that lent extraordinary force to the chief feature, viz. the reflection of heavenly sunshine, and noted it in our sketchbook accordingly.

Then following the distant white line of buildings with the eye, other golden domes and steeples of various other churches and public edifices were seen to decorate it, richly and most charmingly, though none could compare with the sheen of St. Izak.

“It looks very glorious, truly; but is it real gold?” we inquired of our host.

“Oh! surely it is real gold, and a pretty thick layer of it too. How many pounds’ worth do you suppose that there are spread over the dome and its cupolas? Not less than £50,000.”

Just at this moment a labouring man was going past on the lawn, with a queer-looking not unwarlike scythe over his shoulder, one of those scythes whose blades could so soon be turned into the most

formidable of anti-cavalry spears ; and most manly he looked, striding past in his red loose shirt, belted at his waist, and the under part flying in the wind : short full trowsers and knee boots completing his attire. But the moment he came opposite a gap in the neighbouring grove of trees, where St. Izak's glittering rays became visible to him, off went his cap, and bowing himself reverently many times towards the holy sight, he crossed himself as often, and then went on his way a happier man.

From our elevated balcony position in the Director's house, we had a raking view of the similar end of the opposite or eastern wing of the Observatory, enabling us from its equivalent to judge of the look of the roof above our heads, and find it constructed with an angle low as usually thought typical of Italy or Greece, and covered with sheet-iron, painted red—a deep, rich, laky, Indian red. We looked at that colour again and again, for during several past years we have been in the way of hearing grievous laments among artist-friends, that they can no longer obtain such Indian red ; for the pigment sold under that name is, they say, becoming every year more and more like “light red,” and threatening towards the horrid and perfectly unaerial tint of red-lead. Of course we asked where the Russian roof-colour was procured ; whether there were many marked varieties of it, and congratulated those who had

selected a tint so exquisitely rich as that before us. But the matter was so common there, that all the information we procured amounted to this, that red was a general colour about St. Petersburg for roofs; that the colouring matter was an earth, was found abundantly in the country, and that there had been no choice exercised by the Observatory architect. The quality of the iron covering however was, they added, rather the notable matter; for it was of Russian manufacture, from the Ural mountains, and far tougher than the English. It is prepared in long thin sheets, with a peculiar glaze that resists oxidation, and is so pliable that it can easily be adapted to any ridges, and admits of being trampled on to any extent without cracking. But what colour do you paint your iron-roofs in England?

“We do not use iron for such a purpose there.”

“Not use iron for roofing your houses,” exclaimed all the party with the utmost surprise; “then what *do* you use?”

How gloriously green all the country looked that morning! tenderly green the birch-trees, severely green the pine-trees, charmingly green the mountain-ash; nothing but green the broad surface of the grass; everywhere green except on the blue horizon, and some points where the glittering white trunks of the maiden birch, or the red berries of the rowan, and still brighter coral-red of the Siberian elder (a

magnificent shrubby plant, and worthy of more attention in Britain), lent their admirable contrasts.

“What a beautiful situation, what a fertile locality!” exclaimed we, looking at the moment more particularly to the garden in front of the Observatory, and the lilac hedges round the small detached domes for portable astronomical instruments, and of which three or four were then visible.

“Not so fertile as you might think,” was the answer; “the ground is sandy, with very little *humus* as we are on the summit of the hill; and we had great trouble when we first came here in getting anything to grow. You saw that line of fir-trees backing the garden view, from your bedroom window?”

“Yes,” we said, “we did; and very much admired it too; with its dark and formal ranks, it looked so very Russian.”

“Do you know then what those trees were planted for? Why, the first winter we came here there was a great snow-storm; and the snow was drifted along, from the plain that lies on that side, until it was piled and banked up against the Observatory from the ground upwards to the very roof; and to communicate from one door to the other, we had to cut tunnels through the snow, and then went backwards and forwards for several months like so many moles. Now, fortunately, since those trees have grown up, the drifting snow in winter is accumu-

lated over them, and only a little comes up to the house. There is a certain depth of fall, a few feet of course every winter; and all the garden you so much admire is covered up and shut out from our view for half the year. It is not so many weeks since it emerged; and it will not be so many more, ere it will be covered in once again by a snowy shroud, with the thermometer marking as many points below zero, as yours in Britain does above the freezing-point."

Passing strange, thought we, this glorious land that appears before us now under such bright sunshine; in the balmiest of Zephyr air, all the plants shooting out in such exuberance of growth, the birds so numerous and so joyous; and those pests too, the house-flies, as numerous and almost as impudent as in the Mediterranean; is all this scene of life and activity to be so short-lived? Those dear little birds that were hopping about our window this morning, just like Robin Redbreasts,—only it was their tails that were red,—how do they manage their domestic economy in such an iron time as a Russian winter? how do they contrive to subsist through the whole of a period, the mere commencement of which destroyed the mighty host of Napoleon?

These musings were, unfortunately, too transcendental for, and too little applicable to the occasion. It was then summer, our host replied; and the Pul-

kova families were all enjoying themselves ; the boys were come home for the holidays, friends were visiting them from different parts of the Empire, and the Observatory work was nearly suspended for an interval ; yet we are not altogether idle, he added.

“No,” we answered, “you evidently cleared off some knotty point for that man who arrived at supper-time last night ; and this morning, after coffee, you dispatched a quantity of business while smoking your matutinal cigar.”

“Well,” replied he, “that is our way here to a great extent ; whenever work is to be done, we see the persons face to face, discuss the matter and decide it then and there, without having recourse to letters and ‘narrow red-tape,’ except on special occasions. The man who came so late last night, had just arrived from Moskva, to report progress in the building of the observatory-dome there. And the officer who dropped in to breakfast this morning, wished to have a consultation about a new observatory in the extreme South, on which we may need a word from you presently ; but here is one of our brethren with something more generally interesting.”

This gentleman, by birth a Russian of the Baltic Provinces, had been in England some years since, carrying out part of the elder Struve’s well-arranged and magnificent scheme for the exact chronometrical difference of longitude between St. Petersburg and

Greenwich, and made us quite at home in a moment, by asking in excellent English, if we did not speak just a little Polish, or Esthon, or Russian, or some language that he could understand; and then he detailed how his wife and himself were going to entertain that day at dinner all the Observatory family, *i. e.* every one in the establishment, for they all lived on such kindly terms as to make only one family, and much he hoped that we would join them.

Of course we were only too happy; and a delightful, as well as unique, entertainment it proved. We are afraid to say how long the table was, but there were all the assistant astronomers and their families, as far as they had any, the mechanician or optical and mechanical artist of the Observatory, the intendant officer, a Portuguese naval lieutenant, a Sardinian *savant* living at the Observatory for the purpose of studying practical astronomy in so admirable a school, and various relations and friends on their short summer visit, but long summer journeys.

“That one,” we were told, “has come from a thousand miles beyond Moskva, and that one has been travelling continuously for five weeks from the north-east, and that one has come from the neighbourhood of Odessa,” and before the evening was over a whole family arrived from Astrakan, a distance of three thousand miles. Proofs all, of the vastness of the continental country we had just entered.

While, too, we were still at the dinner-table, one of M. Otto Struve's field assistants, a captain in the topographical corps, chanced to return after the successful conclusion of a long chronometric longitude-fixing journey over the steppes in the south-east.

A regular Russian this officer was, and unable to speak any other language than his own. Do you demand, then, O gentle reader, to know what he looked like? We will attempt to gratify you. He was dressed in a green and silver uniform; his carriage was remarkably erect and yet not stiff; he stood barely one half inch under six feet high, with broad, well-set shoulders; his head was large; forehead high and broad, and the ear well back; his hair blond; complexion, rather pale and sallow; eyes grey, in expression open and spirited, the whole look being very frank and pleasing; readiness and promptitude in any good work, combined with high feeling and considerable firmness, being clearly written by Nature on his capacious brow and honest well-built countenance, in which no one feature or member was defective.

The greeting between him and all the astronomers was most warm and affectionate, and he seemed to be an immense favourite with all the children. The boys would persist in showing him, while he was eating, a great prize they had got from some other officer, viz. a portrait of General Gyulai,—no great

favourite, it seemed, in Russia,—“General Gyulai going to the war,” as you looked at the sketch one way, and saw the head of a scornful, mustachioed Hussar. “General Gyulai returning from the war,” when you turned it half round, and then saw the former lines represent the head of a horse, with his ears turned back, his eyes starting out of his head, and his mouth open as if shrieking with horror at a bombshell bursting in his hind-quarters.

One of the boys took our fancy much ; and in the course of the evening we remarked quite casually to his father, “Surely that large-eyed, bright-eyed boy, with such a highly wrought nervous organization, will, if he is spared, grow up to be either a first-rate poet, or a great analytical mathematician.” “Well now, why do you say so?” instantly, with a sudden burst of indomitable fervour, exclaimed the happy parent ; and immediately sitting down right before us, at a little table about eighteen inches in diameter, he eagerly awaited our answer, with such speaking, hungry eyes, and so nervously and anxiously expectant, that we were at first a little disconcerted at the weight attached to an almost involuntary remark. However we presently gave forth our phrenological and physiological reasons ; adding thereto the quickness and intelligence we had already seen the boy manifest, and the mental lead which he evidently exerted over bigger and stronger boys.

Our *vis-à-vis* nevertheless was not quite satisfied ; he had been testing the boy's powers lately, and had been disappointed. " He is pretty well in languages," he said ; " all our children learn Russian as their mother-tongue ; then at three years of age they begin German, and at six, French. Then besides these, which are mostly taught at home, he has got on very fairly with Latin and Greek at school, and not badly with mathematics. He is eleven years old, for instance, and he constructs and solves quadratic equations with great facility ; but then what disappoints me is, he does not go on, he does not invent, and he cannot apply. I set him only yesterday a little problem in Natural Philosophy, and he could not do it."

Now this degree of proficiency, expected from a boy of such tender years, did rather abash us, when we thought of what ordinary school-boys in our own country can do at the same age. Yet it might be a peculiar case, and was so to a certain extent ; but with many instances to accompany it in Russia. For in the numerous large educational and scientific establishments of that land, recruited as they are, from time to time, by the ablest minds from all Germany and Switzerland, and where the young are born and grow up in quite an atmosphere of philosophical learning, they have some special faculties astonishingly sharpened and cultivated. Situated,

indeed, all alone in a broad agricultural flat, one of these observatories becomes a sort of scientific colony, where night and day nothing is talked of, nothing is prosecuted, but the development and extension of those particular branches of science for which it was originally founded; their only official connection with the outer world being, perhaps, the assistance they may give some minister in the examination of cadets seeking engineering or surveying employment in the army or navy.

When we thus found ourselves in conversation with one who was both a scientific man and a teacher on an extensive scale, rich too in German and Russian experience, we made an attempt to procure an answer to a question often proposed in England, but in vain. It is this; whereas systems of education and curricula of study are usually settled by the deductive, *à priori* reasoning of the teachers, has the inductive method ever been applied on an extensive scale, so as to ascertain by the subsequent careers in life of all the pupils, the effects and comparative excellencies of these different academical and other courses in which they were trained? Occasional instances every one meets with, of a rude sort of inductive conclusion; as when a man in middle life declares that all he learned at school was useless, and that he had to unlearn it again and proceed on a different track when he be-

came his own master, and had to make his own way in the world ; others again are found who praise as much the training they were early put through, and look on it as the parent of every good thing they have subsequently effected in life. Yet the two extremes may have come from the same seminary, and evidently there are too many terms in the problem, to enable any safe induction to be arrived at from a few cases only. Hence then, our desire to ascertain whether the Northern directors of education had compared their theory with practice and fact, and had attempted to derive sure results, agreeably with the principles of the Baconian philosophy, from the vast, various and yearly accumulating mass of material, which the lives and careers of some millions of trained and examined students must furnish to their hands.

Our friend, however, was not aware of any inquiry of the kind having been commenced on a sufficiently large scale, or conducted in a sufficiently scientific manner, to be capable of affording complete and extensive results ; but he was acquainted with a conclusion, drawn independently by so many differently circumstanced men in various parts of the Russian and German Baltic Provinces, from the general impressions which their recollections gave them, that there could be little doubt of its containing much truth—truth, too, of a startling character. The con-

clusion was thus expressed: *the first boys at schools disappear at the colleges, and those who are first at the colleges disappear in the world.* Whether with precocity of genius there is necessarily small depth and short life, or whether school examinations are not adapted to find out real ability, we are not prepared to say; but the members of our Government, who are rapidly filling all departments of the public service with the produce of such tests and trials only, would do well to study the matter a little further, before they have committed too deeply to their *à priori* theories a nation whose small numbers and contracted territory render the practical ability of her sons essential to the continuance of her high position in the world.

While still reflecting on this matter, M. Otto Struve asked us if we would like to see his field assistant, Captain Smythlove (as he assured us the name was spelt in Russian), take an observation with the portable astronomical instrument which he had just brought from his long journey. The proposal was entirely to our taste; and we found the Captain, in one of the small detached domes before the great Observatory, engaged in levelling the apparatus. The instrument was an altitude and azimuth of peculiar arrangement, having been constructed in the Observatory itself, to meet what had been gradually collected by long practice and experience to be the

proper requisites of a travelling instrument for geographico-astronomical observations of high accuracy.

The telescope was about two feet in focal length, with the eye-end-half of the cone of rays bent out sideways through one end of the axis by a totally reflecting prism in the centre ; thus completely solving the problem of easy vision at all altitudes, combined with effective illumination of the field of view.

The circles were about fourteen inches in diameter, the upper end read by microscope micrometers, the lower by verniers, with—so seldom seen in this country—the surface of the verniers in the same plane as the surface of the divided circle. The microscope micrometers being likewise noticeable for their illuminations, which prevented light from coming to the divisions in any other manner than parallel to the microscope's optical axis ; and also made the light so coming remarkably powerful and uniform over the whole area of vision.

The entire structure was excellent in a mechanical point of view, the weight having been reduced to a minimum in every place where it was not required for strength ; and where it was, it had been introduced without stint, and gave, especially to the centring of the horizontal circle, from which rose up the stout stem that afterwards branched in two to form the Y bearings of the telescope-axis, a degree of massiveness and solidity in cast-metal that did

one's heart good to look at. Nor was this pleasure at all decreased by the beautiful state of cleanliness in which this instrument had been brought home, from its long journey and abundant employment in Southern Russia.

The great leathern cover of its nearly cubical mahogany box (for the instrument when packed for travelling stood all in a piece) was lying close by, and was immensely worn, rubbed, and stained; but the instrument itself was very nearly as bright and free from dust as it could have been when new.

The instrument duly levelled, Captain Smythlove wished to observe the Pole-star. The late evening sun was still shining, and for so small a telescope to show the star at all, under such circumstances, would surely be a feat, even if its place could be certainly found; and, as clouds were rapidly collecting, it must be found quickly, if the concluding observation of the Captain's geographical circuit was to be taken that day. Now every observer knows well enough, that finding a small star with an altitude and azimuth instrument is not a very easy matter to accomplish quickly. The Pole-star undoubtedly presents facilities over other stars of equal size on account of its slow motion, but yet we have elsewhere known it cause a man very great plague before he could pick it up; and in every previous case in which we had seen it attempted, the observer first tried, looking out to a

meridian mark, if any such were seen, to place his telescope due north, and having got this nearly, he then began to sweep up and down in altitude until he caught the minute speck of light. Not so, however, the Russian officer; he, trained in the school of the Struves, looked at the clock, pulled out a pocket-book, where tables of trigonometrical quantities were entered, with to us perfectly unreadable Slavonic letters in explanation, and immediately set the telescope to the altitude of the star at that moment, within some ten seconds, quite regardless of where the north was. Then putting his eye to the eye-piece, he began to sweep round in azimuth, at his fixed angle of altitude, an assistant turning the dome at the same time; and in something under a minute and a half, he had got the star in the field.

We had just time to look into the telescope, after the observation had been completed, and see for ourselves the fact of the star having been caught; note the neat little disk that it presented in the intervals of atmospheric undulations, which were every now and then apparently breaking the star up into sparks, or making it crawl crab-ways above and below the wires,—when thick clouds came over and concealed it from further view.

On our emerging from the Captain's little observing-room, nearly all the heavens were covered with black rolling clouds, and thunder was heard in

the distance. The sun was still above the horizon ; but close to it, and pictorially in the act of descending. Fiery red was he in colour, as if going down in anger, and the purple clouds, closing in all round him, were reflecting his wrath in their deep-crimson edging : a grove of dark firs stood on one side, a tall weeping birch on the other ; while between and all below lay the flat Russian plain, olive-green, and grey, in the shades of the evening.

“ Ah ! ” said M. Otto Struve, looking at these signs, and interpreting them with infallible local experience, “ there will be no observing to-night ; rain is coming on, and that immediately, so your introduction to the grand Observatory must be delayed to another day.”

CHAPTER VI.

RUSSIAN ASTRONOMICAL INSTRUMENTS.

August 1st.

MANY cloudy days and rainy nights followed that scarlet sun setting in a green-hued sky ; but the morning of the *fête* of St. Elias dawned more auspiciously.

Far as we strolled in the forenoon through the village of Pulkova,—a couple of miles certainly, for though called a village it now contains above four thousand inhabitants,—how rarely a woman or girl was seen ! One only here and there, marching along at a quick pace and looking straight before her, without the smallest attention to anything on the right hand or left, was occasionally to be met ; but sometimes one or two were visible looking out of the curious little high-up windows of their wooden houses, always placed gable-end to the road, and usually furnished with a closely-packed thicket of

young rowan-trees, so immediately in front of the said little windows, as to threaten to prevent ere long any more street scenery being witnessed from them.

The men and boys, however, were in profusion everywhere, in blue or pink outside shirts, and big cavalry boots ; but so idle, doing nothing but sit on the grass and gaze up at the sky. And that grass, how thick and rank and deeply green ! Everywhere, like the over-luxuriant growth on the side of a compost heap, the hedges too, so frequently formed of lilac or a large-leaved thorn (*Cratægus*), seemed an equally remarkable mass of juicy and over-abundant foliage ; but when we looked over into the gardens, what a surprisingly tangled, incomprehensible mass of plants was there ! Small surfaces of potatoes we recognized, and large beds of sunflowers ; but raspberry and currant bushes were the chief contents, shooting up vigorously, and extending their long arms, as it were, wildly up in the air, to prevent their glistening red berries being devoured by the densely matted collection of green weeds below. There was abundance of cherry-trees, or rather bushes, for they grew more like osiers, having lengthy limber twigs, with long separations from leaf to leaf and its accompanying fruit, showing well the rapidity with which the woody matter had been formed. Similarly certain young willows, which en-

tered occasionally into the hedge plants, exhibited such extraordinary force, that we were now and then inclined to doubt whether their long broad leaves did not belong to some species of poplar.

Density and rankness of green, with overpowering weeds, were the characteristics everywhere in these Russian gardens; nor did this state arise simply from the sluggardism of their owners; for though we did see the men so idle that morning, we were taught afterwards that the occasion was a peculiar one, no less than an important feast of the Church; in consequence of which all the males were collected out in the open air, listening devoutly to catch the first rumble of the wheels of St. Elias's chariot, as he is still ascending, or on that day performing a new ascent to heaven. Earnestly they waited, and about noon the wheels were heard, in the shape of thunder, rolling in the distance! A happy omen, which assured all the perfectly satisfied listeners that their crops that season would be abundant, and their harvests all that their hearts could desire.

After our host had disposed of his chief business matters for the morning, he kindly intimated his readiness to show us the interior of the Observatory. He was looking rather fagged, and no wonder, for he had retired to rest the previous night sometime after two o'clock A.M., and at four A.M. the early dawn of a Russian summer day set the flies in com-

motion from their roosting-places all over the walls, and there was thenceforward a continual buzzing and plaguing that prevented any more sleep.

“But why don’t you try quassia, or poison them with arsenic and sugar?” we asked.

“Oh! we have tried all those things here,” said he, “but none of them are of any practical service in Russia. When we have flies at all, they are too numerous to be opposed; we might give ourselves infinite trouble, but would not make any sensible diminution of their number. Their swarms are as immeasurable as the Russian steppes which they come from. I cannot take your advice either,” he added, “of lying down for awhile now, for sleep has quite fled from me; but let me introduce you first of all into my computing-room, or rather that of the Director of the Observatory, for I am occupying it only in my father’s absence. Here is a box of books, too, just arrived from England, perhaps the Report on “Mountain Astronomy,” that we are waiting for, is in it.”

One of the soldiers in attendance went for the Librarian while the other was set to open the box. A discharged Russian soldier is said never to return to peasant-life, yet the hand of this one had plainly not forgotten its cunning in the use of the national axe. Accordingly, with this tool alone, he adroitly effected the work of both hammer and chisel, pincers

too as well ; raised the lid, drew and straightened all the nails, and presented the open box and its separated cover without a crack or an injury, all this before we had finished admiring the fine dome-shaped room we were in. It was twenty-five feet square in the floor, and as many high, with several well-covered writing-tables, a large bookcase significantly marked, "Works of the Central Observatory," containing the original of all observations made at Pulkova ; while the walls are adorned with many portraits of men eminent in science, or revered for the assistance they had given at the building of the Observatory. Chief amongst them stood the late Admiral Greig, whose expressive countenance seemed to tell forcibly of a deeply-thinking, firmly-resolving, good, religious man, of Scottish extraction, and who, as the elder Struve's large work has duly recorded, worthily presided for many years over the scientific Commission "appointed to watch the progress of the extensive building, and see that it answered in everything to its astronomical destination."

The Librarian once arrived, an inventory was taken of the contents of the box. Not however were they the new books that had been immediately expected, but a very curious collection of old works, English, French, and German, all bearing more or less on the progress of astronomy, and picked up at

sundry book-stalls and sales in England by agents of the Observatory. Many of them, from the characteristics of the times they were published in, were rather astrological than astronomical; and therefore not directly necessary to a mere observer or calculator of the modern time, desirous, it might be, only to determine the altitude of a star and correct its apparent place by the formulæ of practical and physical astronomy, but valuable nevertheless. Nay, in a higher and more philosophical point of view even invaluable in tracing the history of ideas, and the actual progress of the human mind in casting off during the dark ages the domination of scholastic dogmas or false metaphysical subtleties; and in slowly learning to investigate nature directly and for rational ends.

Not at all unsuitably either did this collection of curiosities now arrive for our friend's particular tastes and present employment; for though his daily official duties as acting superintendent of a large and widely ramifying establishment were most onerous, yet he had two lengthy memoirs in progress on his table; one, a *résumé* of the results of his recent measures and calculations of certain new and difficult double stars; the other, an account of the intercourse of the great Kepler, with the no less remarkable genius, Wallenstein, Duke of Friedland. The latter's career, judged from actual fact, was frequently in wonder-

ful confirmation of astrological predictions ; *his* horoscope had proved true, however those of smaller mortals had failed.

How could this be ! Was there then after all a secret sympathy between the distant stars and the trembling breath of human destiny ? The answer had been found in certain huge volumes of old manuscript in antique German that lay on the table, and contained numerous letters that had passed between Wallenstein and Kepler ; besides almost innumerable astrological essays by the latter. The great Duke wrote from time to time to the astronomer to know what sort of campaign the heavens were favourable for, and exactly as he received answer so he went and did ; coming at last even himself to think, that it was his stars, not his military genius which ensured the destruction of Austria's enemies, whenever he marched against them.

From this room, that owed its vaulted roof and walls of masonry from four to seven feet thick, to being underneath one of the smaller domes, a short passage brought us to the entrance of the Western Meridian apartment ; fifty-four feet long, thirty-six broad, and twenty-two high, containing the transit instrument and the vertical circle.

What luxury of elbow-space those instruments seemed to be enjoying ! and were too, and undeniably to their advantage ; for while the walls of the

room were very properly built of thin boards only, to prevent their having mass enough to take in by day the large charge of heat which stone walls do, or to keep what they get as long, they were so far removed on every side from the instruments, as greatly to decrease, if not practically to annihilate, any bad effects to them from residual radiation or conduction. At the same time an insensible ventilation appeared to be going on so abundantly, that without there being any actual window or shutter open, we found the internal temperature within a fraction of a degree of that outside. The principal precautions however against that most insidious foe to extreme accuracy in practical astronomy, variation of temperature, were to be seen, they told us, in the subterraneans beneath, which should be visited on another occasion; but in the meantime our attention was called to the means adopted for combating another ill that fine instruments are heir to in this world of degrading practical troubles, viz. dust. To this end the floor of the room being composed of polished parquettèd oak, and both the walls and ceiling of smooth wood, they offered no harbour to, or immediate producing cause of, the mischief; while each instrument being furnished with a so-called "pavilion," or a housing of polished mahogany, moving with ease and smoothness by means of nicely turned wheels on a brass railway,

could be uncovered during observations, by rolling away the cover to the unoccupied end of the vasty apartment; and immediately after the observation, could be again covered and shielded so securely, that the roof observing-shutters might afterwards be left open, rain even might fall, or domestics be admitted for cleaning purposes into the rooms at large, without any risk of danger to the delicate tenant of the cabinet-work pavilion.

All this was, of course, merely preparatory matter of comparatively low order; and the real display of what man can do in assisting and perfecting his various senses, until they are at last equal in power to measuring those extraordinarily small angles among the stars, nowadays required for the improvement of theory or the extension of our knowledge in astronomy, was rather to be looked for amongst the optical and mechanical arrangements of the instruments themselves.

The first of these that calls for notice is the transit instrument; it was made by Ertel and Son, of Munich, and has an object-glass of 5·85 inches aperture, and eight feet six inches focal length; the axis is 46·5 inches long, with counterpoised pivots 2·17 inches in diameter; the magnifying powers employed 206 and 292. In the levelling of the axis, a very neat plan is adopted of having the level carried by a cord from a crane-frame that brings it

over the centre of the instrument, and allows it to be applied, lifted off, and reapplied, without any pernicious contact from warm human fingers. For the "collimation" error, immense benefit is derived from the great breadth of the room, which allows piers for collimating telescopes to be erected between the instrument and the outer walls; and they are therefore well defended from sudden changes of temperature. There are also collimating and meridian marks at a distance of 550 feet outside, which are viewed through object-glasses of long focus, arranged on these auxiliary piers in the observing-room.

So far this is an arrangement well known in many places; but here there is the addition, that their "spectacle-objectives" are mounted in a sort of micrometer frame, transverse to the meridian, and worked by a long handle from near the eye-end of the telescope, so as to furnish a measure, and an extremely accurate one, of the particular amount of collimation error from day to day; for from day to day it is measured, and the varying result so found applied by calculation to each twenty-four hours' observations of stars.

"Good gracious! why don't you measure it once for all, and have done with it?" is unhappily the general tendency of most men to exclaim, even the most highly educated, if they are without much ex-

perience in practical astronomy and its allied sciences. "Fasten your instrument down firmly," they say, "on a stone pier, and then what is there to move it? How can it move?"

Well, it may not be so easy to explain how or why, as to show the fact, that it does move; for, apply only a sufficient magnifying power, and continual changes in the position of the instrument become evident, infinitesimal almost in amount, but absolute in their reality. Some of them depend on the slow infiltration or exfiltration of water from the subsoil on which the building is erected; and some from changes of temperature in the air: changes shown visibly by a thermometer from minute to minute; while from day to night, and summer to winter, there are other greater changes dependent on the continually varying position of the sun, which are ceaseless in their action, and protean in their shapes.

Now the above collimating and meridian marks of the Pulkova transit, afforded us even another example of the very advanced state of all these inquiries and considerations in Russia; for in building such marks at other observatories, what has generally been cared for there beyond erecting sufficiently strong and firm brick or stone pillars? We believe, nothing! Except perhaps to put the collimating point itself under shade of a small cornice, to prevent rain

running down its face ; and perhaps, in some cases to encircle the pier with iron spikes, to keep mischievous boys off.

We do remember indeed, five if not six, such pillars at various distances from a large and first-rate Saxon observatory, where the midday sun rises within 12° of the zenith in summer time ; and where, being in the austral hemisphere, the same sun, as Sir John Herschel explains so well in his ' *Outlines of Astronomy*,' strikes hotter by one-thirteenth than it can ever do in the northern half of the world. There then it was, that on one fine day, some vultures were perceived at one of those marks ; and on the inhabitants going down to the low ground where it stood, lo ! a dead horse at the foot of the pillar ! The markings in the sand round about were examined, and the conclusion drawn, that the horse, having been careering along at night pursued by dogs, had blindly butted full tilt against the horizontally projecting spikes, and been thereby killed. Then came the question, whether the impetus of this shock had disturbed the position of the pillar, to that microscopical amount that would be sensible in a transit instrument of ten feet focal length. This point was discussed and turned about in every way ; yet never was anything said about the fierce southern sun, that attacked the pier, and vehemently fought against it almost every day of its life.

Note however the different mode of proceeding at Pulkova. It is in Russia certainly, nay in North Russia, and the sun can never be very high there, or snow and ice long absent; yet the astronomers know the influence of the evil eye of our terrible and surpassing central star, so well, that they did not consider their meridian marks, spite of the massiveness of the pillars, to be so safe from disturbing influences as they should be, until each of them had had a little brick house with vaulted roof, erected over it. The walls of each protecting house were then furnished with small apertures, through one of which the mark inside could be observed as it reposed in perfect shade; while through others a gentle circulation of air was going on, to carry away even those fainter heating effects of the sun's rays, which will persist in penetrating surely, though slowly, through even a brick wall.

The third error in the adjustment of a transit to be inquired into, is the deviation in azimuth; and this can only be investigated by observations on the stars themselves; because, unhappily for convenience and extreme precision, there are no chamber methods yet discovered, by which an east and west direction can be found, similarly with the determination which is made easily and so exactly whenever the direction of either zenith or nadir may be required.

The stars then are had recourse to at Pulkova, as at other places, for the azimuth position of the transit instrument; but not until certain other refinements of calculated corrections have been applied, to compensate not merely for errors of adjustment or of place in the instrument, but for a much minuter class of errors, viz. those in the mechanical construction of the apparatus. The chief of them depends on the figure of the pivots, or ends of the horizontal axis, for if both these be not truly cylindrical, the telescope will describe in performing a revolution, not a circle, but a species of zigzag; as well expressed by Mr. Struve; and the corrections already determined in collimation and level for one position of the telescope, will not necessarily be true for it when pointed to any other part of the sky.

There is always the hope, with every ordinary possessor of a transit instrument, that the differences of *his* pivots in particular must be so small, that the effects of such error will not be practically sensible; and it is not indeed easy at first sight to see, how pivots can well be otherwise than circular in section, when they are turned in a turning-lathe, and reversed and turned again, with all the refinements and perfection of modern engineering science.

True however it is nevertheless, that though the

idea of a circle is so common to the minds of all men, and at least in geometry made abundant use of, yet no such thing exists in nature ; we are therefore but deceiving ourselves when we assume that such a thing is actually before us. A useful stepping-stone it may be in any investigation, but the sooner that so false a float is discarded by scientific swimmers the better, whether they be engaged in our present occupation, or examining the structure of the lenses of the eye, or inquiring into the orbits of planets as they revolve around the sun. In this case of the Pulkova pivots, there was a very plain cause of possible error, for they were of steel. "German steel" certainly ; and such steel we have heard named and immensely praised by a great astronomical authority in England. But here, in Pulkova, we were told by some who had spent half their lives in Germany, that all the steel used by German "opticians," comes from England ; so that if their pivots have better qualities than such as are made in London, it is due chiefly to the German manner of working, as well as perhaps to more careful discrimination and sacrificing choice amongst many examples. Nevertheless, not even the Germans can, in the tempering, make a piece of steel equally hard in every part, and when that is the case, it cannot be turned and figured with absolute truth.

Mr. Struve therefore began his rigid inquiry, and allowing a bar of metal carrying a very sensitive level to rest with one end on the pivot, while the other was attached to a centre close by, he obtained a series of magnified readings of the bubble on its scale, while the telescope was necessarily directed to different heights in the sky. Eliminating then, the effects of difference in the pivot radii touching the Y bearings, from the radius under the level, and comparing the opposite pivots together, he obtained, besides the form of each, the astronomical effect of the two combined; and this was found to be so decided, so different from what would have been the case had the pivots been really and perfectly circular, that the zigzag of the telescope's path measured in some places 0.54 of a second of space from the true plane of rotation.

The quantity however affecting the means of long series of observations is much less than this, only 0.14"; for from time to time the instrument is reversed on its piers and employed with illuminated end, successively east and west; and has further the peculiar Pulkova feature, of the object-glass and *eye-piece* being made exchangeable from one end of the telescope-tube to the other; in this manner bringing two new series of points on the pivots into contact with the sides of the Y bearings;

when the errors to a great extent counterbalance each other.

The most remarkable example however of the extent and uses of reversing, is afforded by the second large instrument in this room, the vertical circle of Ertel.

CHAPTER VII.

STRUVE'S VERTICAL CIRCLE.

August.

IN this chapter, O indulgent reader, we have arrived at what is perhaps by far the most critical part of our whole undertaking; and begin to feel some fear for the result. Our position, too, is all the more difficult, inasmuch as having once commenced, we have a duty to you, as well as to our subject, in going on to the end, but always in such a manner as to meet your approval and suit your circumstances. Let us freely exchange confidences then; and haply, we may afterwards proceed with more cheerful mind.

The case is this: in our recent chapters we have entered a Russian astronomical Observatory, and if we would form a good idea of the scientific side of the Russian character, it is incumbent on us to ascertain what they have got in that Observatory. At the same time, seeing that this little book of ours, is

not intended to be an astronomical work, we can have no excuse for making its pages the vehicle of a rigid or technical treatise. Neither again, even in a popular form, would it be expedient to give an account of the whole Pulkova Observatory, and all the processes of modern astronomy conducted therein; for in so doing we must infallibly be repeating a great deal of what is daily practised in this and in every other country where astronomers are at work; and there would be little advantage in going to Russia, for what we can get closer at hand; but when we find peculiarities of method, and originalities of conception based on principles well reasoned out, these are surely deserving of presentation.

Not though, if we had the gift, would we attempt it in that light and jocular style which would tend to make the whole affair look over-easy or falsely amusing, and something contemptible also; for we are happy to assume that our readers, whatever may be their special walks and occupations in life, have souls as desirous as our own can be for truth and fact; and are as capable of appreciating scientific principles and results, when divested of the numerous professional technicalities by which they were first discovered: and confident are we too, looking to the large amount of subject in the matter before us, that if only some kindly indulgence be extended for a time to our imperfect attempt at narration, the

reader's graceful act will be found not altogether unrewarded in the end.

We are still, then, it will be remembered, in the western meridian room of the Pulkova Observatory, and standing before a circular astronomical instrument, which we have already hinted contains an unusual number of novelties and refinements, elaborated by Russian astronomers. We speak of Ertel's circle.

By that distinguished German artist whose name is engraved upon it, the vertical circle of Ertel was indeed manufactured; but in general design, as well as aim and scope, it claims, and can only claim, and does most emphatically claim throughout every part, for its author, the elder Struve; at once the Professor and the observer, the astronomer of the fixed Observatory and the geodesist of many a glorious surveying campaign. In these grand field operations M. Struve, like all other Russian astronomers, has had abundant experience; and could not fail at those times to be struck with the remarkably close approaches to accuracy, which are often made by the comparatively small instruments employed in such triangulations. The same thing has pressed itself from time to time on the attention of great geodesists of various countries, from Lacaille and Cassini among the French; down to Roy and Everest among the English; to such a degree too, that it has often

been seriously doubted whether, for the purpose of accurate mensuration of angles, especially of zenith distance, the best dimensions of instruments have not long since been overpassed in public Observatories.

Certain classes of errors, it is well known, increase with the size of the telescope ; atmospheric disturbances for instance, with the diameter of the object-glass and amount of magnifying power employed ; and in a still more important ratio, because according to the weight and cube of the linear dimensions, the friction of rubbing, and flexure of fixed constituent portions. Hence, most wisely, no astronomer has ever attempted to measure meridian altitudes with a Herschelian or Rossian reflector ; yet, with his eight-foot quadrant of Maskelyne's day, or six-foot mural circle of Pond's, has such a one often been disturbed, when engaged in the quiet of his sidereal retreat investigating discordances of one and two seconds in his observations,—been disturbed, we say, by hilarious boastings from some hydrographic sea-captain, of how he, the captain, has, when in the southern hemisphere, with a one-foot alt-azimuth circle, determined his latitude so accurately, that he could by two nights' stellar observation on either side, north and south, of a house, determine its breadth to within a yard ; nay more, that he has simply with his sextant and altitudes of the sun near the prime

vertical, measured astronomically through the time deduced, the length of a short east and west base line, with a hardly greater limit of error, and finally ascertained the parallax of α Centauri, with a probable error of only two-hundredths of a second.

On the other hand, however, some very warning results have signally occurred on various occasions, from the use of too small astronomical instruments ; as when the last years of Mechain's life were embittered and brought with sorrow to the grave by the uncertainties of his measures of a star which he thought single, when it was really double, and was easily seen to be so in telescopes of greater power ; or, as when Baron de Zach found his angles with the highly vaunted French repeating circle, were always decreasing the longer he continued the repetition ; leading him, in so far, to the legitimate inference, that if he began with an angle of 90° and went on measuring it with that reputed infallible and *multum in parvo* instrument, sufficiently long, his 90° would be at last decreased to nothing.

The *small* instruments, therefore, have not yet got it by any means all in their own favour ; and what they may have sometimes successfully performed, is chiefly due to the physiological peculiarities of those who have handled them ; peculiarities which, simply pass the experience of all ordinary men, and are incapable of being imparted by education.

So in spite of what report may blazon was done in the observing way, on some special occasion, by an equally special variety of the genus *homo*, armed with an apparently impossible small sextant, it behoved M. Struve, as the director of the largest Observatory in the world, and with numerous assistants collected from many countries to cater for, to devise something more suited to human nature's daily exhibitions. While therefore fully appreciating alike the decreased friction, torsion from that friction, and flexure from the constant action of gravity in the smaller instruments of surveyors by sea and land,—he asserted the necessity of a very considerable degree of optical power, as necessary to exact observation. But with this increase of bulk he insisted on keeping up all that facility of reversing as usual in field theodolites, and so impossible in mural circles; for to this quality, and its important service in eliminating many errors, he found reason to attribute most of that accuracy in the final measures, which by too many unthinking spectators, had been at once paradoxically handed over to the lilliputian dimensions of the apparatus employed.

Hence the construction of this vertical circle by M. Struve, became a problem of stirring interest; and practical astronomers eagerly looked on, to see what steps would be taken by that one man amongst them all, whom they regarded as one of the most

consummate masters of his art, in all its ramifications from mathematical theory to workshop manipulation.

In the first place then, M. Struve decided, that for space-penetrating power, the object-glass should be nearly six inches in diameter. Five inches and nine-tenths it was made; but within what compass could the focal length be packed away? This is a frequently mooted question; the transit object-glass already described, had a focal distance of seventeen times its diameter, and that was thought a great concentration on the small objectives and long focal lengths of a former day; but the Optical Institute of Munich, urged by the new occasion, condensed the proportions of the grand vertical circle's objective to thirteen times and one-tenth only; yet withal giving such excellent definition, that the favourite magnifying power in observation of stars is so high as two hundred and fifteen.

More work however was before the opticians, as the telescope tube must be packed into the smallest possible compass mechanically also, and without decrease of strength; for besides the general desirableness of lightness, the designer was peculiarly jealous of transverse breadth, seeing that the telescope was to be outside both the circle and its supports, and therefore its leverage for flexure would increase precisely with such breadth. On this ac-

count, instead of adopting the usual form of a pierced central cube, and two conical tubes fastened thereto base to base, he, as it were, flattened the cube and circular bases of the cones to the breadth of their truncated outer ends, which were equal to the diameter of the object-glass; retaining thereby the conical form in full in that direction, which would be useful for resisting gravity flexure; while the central line and whole weight of the telescope were by such means brought nearer its side-fixings by more than one-third part.

The telescope, thus at its minimum distance from the face of its attached circle, revolved for measure in a vertical plane on a horizontal axis, which was carried in a gun-metal frame, attached to the summit of a strong vertical steel axis three inches in diameter, and four and a half feet long. This again was supported, as in a bearing, in the central axis of a massive brass pillar, furnished below with three strong spreading feet, each armed with an adjusting screw, and all of them resting on a granite pedestal that rose through the floor of the observing-room, from the great subterranean mass of masonry. The whole instrument thus formed a sort of giant theodolite for vertical angles, where the utmost facility was given by counterpoises, happily applied to the lower central point of the vertical axis, for reversing the machine "face east, or face west," so quickly and

without strain, that a star might be observed either way at one and the same meridian transit, thereby eliminating both index, and some other, errors from every result.

That the star should be well seen and accurately bisected, the size of the object-glass, and the highly magnifying eye-piece already alluded to, sufficiently ensured ; but that the position of the telescope in vertical angle at the instant should be accurately known, depended on the divided circle over whose face the telescope moved, and on a variety of subsidiary parts. This divided circle was three feet eight inches in diameter, divided to every two minutes, and read off, not by verniers, as might have been expected here, but by microscope micro-meters. In Great Britain, to be sure, we have long employed this method ; but the great French mathematicians of the beginning of the century, preferred verniers both in their divided instruments, and in the "lever of touch" of their standard scale apparatus ; while the Germans were strong in the same opinion, and their Reichenbach's celebrated meridian circles in the observatories of Königsberg, Dorpat, and Abo, were all provided with vernier readings.

Now Reichenbach was no doubt a most scientific mechanic, quite an apostle of the new astronomy in Germany ; and his example for a time was so ex-

tensive and overpowering, that even in England the principal opticians were occasionally snubbed by the rising theoretical men of their day, for presuming to depart from Reichenbach's examples. Our eminent Russian astronomer though, who, like the majority of his nation, combines a large portion of British, as well as French and German capacities, gave the two methods a fair trial, and then decided without doubt on the superior capacity of the English system. Between Encke, his son Otto Struve, and himself, M. W. Struve found no personal equation when reading microscope micrometers on a preliminary trial in Berlin; and a probable error of only $0.16''$ on a single observation under similar circumstances of light. When the direction of illumination was altered, he did indeed find a difference of $1.16''$; but this he corrected by a specially shaped illuminating tube for his Pulkova circle, and then had the satisfaction of finding that each of the four reading microscopes, magnifying thirty-two times, had a probable error of only $0.090''$ for a day, and $0.098''$ for a night observation.

In the optical part of the measure there is a curious little difference of plan to note, as well at the microscopes, as at the telescope, for almost whenever an Englishman observes, he takes a single wire and with it bisects the object observed; while the Russian takes two wires, $7''$ or so apart, accord-

ing to the magnifying power, and brings the objects into the middle of the space so defined.

The adoption or rejection of one or other method may be influenced without harm by each one's taste, but all men will agree on the corrections necessary to be applied to the number read off from the instrument, before calculation for astronomical purposes can safely begin. Every part of the instrument for instance is bending under its own weight, and may vitiate the results. Let us examine therefore each portion in detail. First there are the excessively thin spider's lines stretched across the field of view; and on or between which the star is observed. These, one is inclined to think at first most bendable, but curiously enough they turn out to be least so, by reason partly of their being stretched almost with breaking strain across the opening in the metal plate; and partly of their infinitesimally small weight, on which their catenary curve would mainly depend.

With the powerful means offered him by the collimators, carrying a magnifying power of one hundred and fifty times, and the circle telescope moving in azimuth on its vertical axis, W. Struve tried hard to detect flexure by comparing three parts of the wire, at distances of 10' from each other, but was unable to find any. He had previously come to a similar result at Dorpat, with

an instrument where the aperture across which the wires were extended, measured 1.23 inch; and as in the Pulkova instrument, the same part measured only 0.62 inch, when, *cæteris paribus*, the flexure should be no more than one-fourth of the former case,—he was perfectly content with the result of the later practical trial.

Far differently however fared it with the strong and hard metal telescope-tube. This must bend. Not only so, but its support, the strong outer end of the horizontal axis, bends with the weight. How much? Ten seconds is fortunately all; and its effect on the truth of motion of the telescope, is happily capable of complete elimination, by giving the other end of said axis an error of level, equal in amount, but opposite in direction. The flexure though of the telescope-tube itself, acts at once in the most prejudicial direction, viz. in that of the measures; but in the first place it is small, by reason of the strength and conical figure of each half of the tube; in the second place, the portion which affects an astronomical observation being only the difference of either end, and the two cones being as similar as they can be made by art, it is astronomically insensibly small; and thirdly, to make assurance doubly sure by actually establishing limits by trial to an always possible error, M. Struve has introduced his Pulkova method of reversing the object-

glass and eye-piece, which are carefully made of exactly equal weight and leverage on the ends of the tube.

Then comes the more complicated affair of the effect of gravity in distorting the figure of the circle; for though it is made of strong and almost brittle gun-metal, yet it bends and stretches within microscopically sensible limits; so that, put it into any position and you will find that the lowest spoke is stretched, the uppermost compressed, and the horizontal ones curved downwards. Investigation into the results and consequences of all this elastic yielding might be almost unending, but for M. Struve's happy suggestion, that altitude observations of stars by reflection in a fluid being made with reference to the nadir instead of the zenith, may be considered as having been taken under circumstances of *negative* gravity, and will consequently by presenting on the angle finally read off, an opposite effect, give the means of removing even this very troublesome phenomenon.

There is still to be sure an alteration of the value of the micrometer screws of the circle-microscopes, produced by temperature, and making what should be 120'' even, 120·29'' in the Russian summer heat of +25° Réaumur (=88° Fahrenheit), and again reducing it to 119·68'' in the terrible winter cold of -25° Réaumur (=24° below zero Fahrenheit); but

this is eliminated by the method of observing divisions on either side of the microscope's zero, and corrections being finally applied for errors of division and irregularity of screws, leave on the mean reading of the four microscopes, a probable error of only $0.03''$.

The whole probable error of an actual astronomical observation is of course much greater than this, including as it does so many other than merely mechanical sources of disturbance, but it is yet said to have been found after long trials to be only $0.210''$ for a double observation of the Pole-star, $0.186''$ for α Lyræ, and $0.208''$ for 61 Cygni.

Hence the Russian astronomers may with reason consider, that they have here one of the most accurate altitude-measuring instruments which the world has yet seen, and therefore equal to all the highest requirements of modern astronomy either in delicate researches of aberration of light, or parallax of the fixed stars.

We often subsequently contrived to enter the Observatory for no other purpose than to admire the singular beauty of mechanical structure pervading every part of this admirable "vertical circle," truly the *chef-d'œuvre* of the aged chief of Pulkova. So strong, so light, so well poised, so simple, yet withal so complete, with one feature appearing in its place after another, innate or applied, for correcting

every conceivable imperfection or disturbing cause. Thus, asked we one day, while gazing at the axes and microscopes standing out full in the free air of the large room, "Have you any special precautions when making an observation of the sun?" "Oh! many," they immediately answered; "not even in winter do we allow the heat of that burning star to fall on those precious limbs. See here is their parasol, a system of vertically rising wooden screens halfway between the instrument and the openings in the wall and sloping roof; then there is a light card cap to fit over the rim of the object-glass, so as to prevent that being meretriciously warmed up: and finally, to guard against the interior of the optic-tube being warped or expanded by the streaming rays after they have passed through the transparent glass, there is a series of consecutive blackened diaphragms inside, which catch up and absorb all the rays that fall through obliquely and do not pass on to the eyepiece:—in that case, no doubt, these diaphragms become heated, and thence expanding would certainly do violence to the telescope tube that contains them, if fixed into it in the usual manner; but here, they are so arranged on flexible and almost isolated internal supports as not to come into actual contact with the outside tube at all; and therefore, in so far, their largest expansions can never affect any of our finer adjustments.

“Oh! this temperature, this temperature,” said our Russian instructors, “with its continual and inevitable variations, it is what we are always fighting against. See here is the sidereal clock which is employed in conjunction with the vertical circle. It has the best compensated pendulum we can contrive, and yet it is necessary to ascertain its changes of rate during part of a night, by comparing it with our normal clock.”

“Your normal clock!”

“Yes! that is a clock in the centre nearly of the whole establishment, and preserved summer and winter at a constant degree of warmth. Come and see it.” So saying, our friend and guide led the way out of the panelled instrument-room, through a passage with double doors; and then we found ourselves in a magnificent apartment with castle-like masonried walls, a floor of polished oak some fifty feet square, though interrupted by an inner circle of pillars, each seven feet thick, and supporting amongst them an ornamental dome-shaped ceiling, nearly thirty feet high.

CHAPTER VIII.

THE PREDOMINATING VIEW.

August.

“Now,” said our friend, “you are in the central apartment of the Imperial Observatory, and will easily understand our whole topography. There, to the west, is the meridian-room you have just been in, with the transit instrument and vertical circle; here, to the east, is another meridian-room of equal size, arranged for two first-class instruments; to the south is the old library and the prime-vertical transit-room; while to the north is the entrance-hall, with the chronometer-room attached; and upstairs is the grand equatorial that surmounts the whole Observatory.”

“Good!” was our response; “then let us now begin at the beginning in a legitimate way. We have ascended from the lawn and flower-garden, we will suppose, by the fine granite steps of your bold

and classic portico ; have entered within your front door of really majestic proportions, emblazoned above with '1839' in golden figures, and find ourselves in your airy and well-illuminated entrance-hall. A fine tall ceiling it has ; but ah ! what is the meaning of that little picture so high up in the corner, at the very top of the wall, showing a gold frame filled with silver drapery, all except a brown face, and with a little wax candle burning in front of it?"

"That ! why that, you must know, is a holy picture of St. Nicholas. We ourselves do not use it, as we are mostly Lutherans ; yet if we had it not, people would be making remarks upon us, and thinking it was very strange, and asking if in this house we ever thought of religion at all.* But let me call your attention rather to these apertures in the walls below. By opening or closing one or other of them, we can admit either the external air or that from the constantly stove-warmed subterraneans, and in that manner keep the chronometer-room at any temperature we like, to the complete correction of all outside irregularities ; the double windows, massive walls, and pillars of the rest of the great apartment, much facilitating equal internal heat through its whole extent. Look at this thermometer, standing now at 13° Réaumur (62° Fahr.),

* "The house that hath no God, or painted saint, within,
Is not to be resorted to,—that rooffe is full of sinne."

G. TUBERVILLE, 1553.

just the same as that on the other side ; and were you to enter here six months hence, in the middle of winter, you would find the mercury still within a degree of the same point."

The apartment was certainly remarkably uniform in its temperature, and pleasant too ; so we spent much time in wandering round the walls and interior circle of square pillars, gazing on the fine gallery of astronomers' portraits, generally half-lengths in oil, of the size of life,—a flattering collection to our country, seeing that pretty nearly one-fourth part represented Englishmen. Most of the pictures were necessarily copies ; but there were some fine originals, especially of Copernicus, Galileo, and some more modern worthies, while the series honourably concluded with portraits of the reigning Tsar and his imperial predecessor, under whose liberal encouragement the whole edifice was reared.

Into the meridian-room on the east we peeped. Its chief tenant was a transit circle not worthy of much of our attention now, being intended for nearly the same purposes as the instruments we have already described in the west, though aiming rather at an enormous number, than an extraordinary high quality of observations, and also having been since very largely surpassed in size and some other qualities by Mr. Airy, in his magnificent transit circle of iron at Greenwich. The Pulkova instrument is

notable, nevertheless, for the early and positive stand taken by the Russian astronomer against that favourite German method, of a telescope made purposely weak, and then counterpoised, to prevent flexure.

When their great Reichenbach was still an artillery officer, he opened up a most important mechanical truth, which he afterwards traded on advantageously, to the effect, that no tube can be formed so strong, that it shall have absolutely no flexure at the ends when supported in the middle ; and he practically proved his point, by raising a large and stout war-cannon, and showing its bending to be sensible. Triumphant in this, he was soon induced to go altogether to the other extreme ; and throwing away all the ordinary ideas of strength, and the weight which must more or less accompany strength in the tube itself, he preferred to make a structure, light, thin, and utterly bendable, leaving the after straightening of it to a system of levers and counterpoises,—a system the contemplation of which generates a peculiar pleasure in the German, and generally in the purely theoretical mind amongst all nations. The practical Russian astronomer, however, as we have seen, was not content with it, and preferred the English method of strong double opposing cones, supplemented by his own plan of reversal of object-glass and eye-piece.

On the south again of the central hall, after passing through the old library now a storehouse for small transportable instruments, we looked into the prime-vertical transit-room, and uncovered our heads with respect, on thinking of the noble old man who here, nineteen years ago, commenced a cycle of observations on the important phenomenon of nutation of the earth's axis, and had even transcended Bessel himself in the extraordinary perfection of all his results, until struck down by a terrible illness only two years since. An illness painful and dangerous, that would have destroyed any ordinary man, and to recover from the final effects of which he himself had been sent off by the doctors on a long tour to the south of Europe. "But he is on his way home now," said every one in the Observatory joyfully and with glistening eyes. "*The Father* is almost himself again; he will be here in a few days, and then he will have the satisfaction of himself taking the last observation to complete his lunar cycle of nineteen years."

Ascending next by a winding stair from the southwest corner of the entrance-room we came to the library, containing seven thousand volumes besides some fourteen thousand scientific papers and memoirs, all neatly arranged in open cases, and with a well-classified printed catalogue of the whole, nearly completed, and about to be published.

The openness of the shelves rather troubled us. "Don't your books get very dusty when exposed in this way?" we asked.

"No, not at all," answered our conductor; "where is the dust to come from?"

Not from the floor, thought we, on considering further, it is such clean polished oak; not from the walls, encased as they are in smooth wood; and not from so glossy a ceiling; so we faintly intimated that it might come in by the agency of the necessary warming in winter.

"Oh, not from that at all," was the answer, "for the room is warmed by pure air from our dustless Russian heating-stoves in the basement; and see, there is no dust here." And therewithal the speaker drew his fingers along the tops of big books in many of the compartments, and then showed us the points of his digits cleaner than would have been the case in an English open-fire-heated library, though the books should all have been dusted that very morning.

Up again we mounted higher still by another side staircase, and then entered the crowning observing-room of the whole, the apartment of the grand equatorial, under the large revolving roof that forms the central summit of all the Observatory buildings.

To one who has been struggling, and in vain, for half his official existence to get anything larger than

a six-inch object-glass, it is enough to take away his breath entirely to look, for the first time, on the magnificent parallactic tube that here met our gaze. An object-glass of 14·93 inches in diameter, with a focal length of 22·9 feet, forms but the commencement of those imperial proportions, around which the mechanical structure arranges itself; for the equatorial mounting, in its divided circles, well-turned axles, and clockwork motion, has experienced as much care and attention as the more especially optical details.

No doubt the general style of the apparatus was that known in England under the name of the "German form" of equatorial, and is not very generally admired there. But though we had shared in that opinion when looking, on many a previous occasion, over the plates in M. W. Struve's admirable 'Description of the Observatory' (St. Petersburg, 1845), and thinking of how shaky those great tubes and bars of metal must surely be, curiously poised up, far outside their true supports, and those supports so thin and frail, yet we were now induced to somewhat modify our previous conclusions. There was, in truth, an air of much more massiveness in the appearance of the instrument itself than in its counterfeit presentments on the copperplate prints, apparently, we thought, from the mere elevation or plan views there not realizing fully to our minds all *three*

dimensions at once, *i. e.* length, breadth, and thickness; for the drawings, it is just to add, were extremely accurate as far as they went, or could go. We even tried the end of the telescope, when clamped, with our thumb and finger, and found it resist most firmly. This was good so far, but the application of the naked eye to the outside of the tube could not of course be much of a test, and the real trial would come on when we should observe a star through the giant telescope at night.

The revolving roof erected over this as yet *ne plus ultra* of all achromatic refracting equatorials of the whole world, stood twenty-eight feet above the floor, and was nearly thirty-two feet broad. Extremely massive for such a structure, and yet turning with facility on a ring of twenty-two friction wheels. True friction wheels, unattached to either dome or wall, but connected to so strong an intermediate ring-shaped frame of their own, that there appeared to be no necessity here for any of those additional methods of resisting side pressure of wind, which have spoiled the symmetry of some American as well as several British revolving telescope domes. The application of the turning power was through means of winch-handles; of these there was one on a level with the circular railway, and racked edge, at a height of ten feet above the floor, for giving quick motion, and this was connected

by an endless chain and multiplying wheels with a similar handle near the floor, so that a person there could turn the dome more easily than when above, though of course more slowly, for a given rate of revolution of the handle. Finally, there was a subsidiary handle, and further multiplying-work which could at pleasure be put into connection with the second wheel, and so enable a man's hand there to overcome surely, but excessively slowly, an immense resistance at the circular railway.

There was no such resistance now ; but the multiplying wheels of final resource were put into gear nevertheless ; for every owner of an equatorial telescope and revolving dome does so delight to exhibit to his friends how extraordinarily easily he has contrived to make his dome to turn. So our learned friend had kindly taken a great deal of trouble in showing how well the arrangement of friction wheel rollers must act for carrying their vast burden, by applying one finger only to the final handle at the end of its multiplying train, and lo ! it moved ; and the whole dome must have moved also through some very small space.

The case was proved, and we believed that this one might be, for its size and weight, the most easily-turned dome in all Christendom, when presently a very unexpected and more powerful demonstration was given. To-day seemed to be a birthday

holiday in the Observatory, and the boys of several families, freed from their usual books, had at last found their way up, and after us, into the room of the great equatorial. And while they mostly stood around the winches and multiplying toothed wheels of yellow brass on the floor level, what must one of them do (the young man of eleven years of age, who had not been able to solve the problem in natural philosophy which his father had set him, p. 84) but steal away silently up to the level of the first and upper winch; and then, suddenly beginning to turn away at that, the "slow" handle, with might and main, he not only made the large dome begin to trundle round like a great elephant all of a sudden become animated, but he set the two lower or "quick" handles spinning round with a degree of noise and dizzy velocity that put to instant flight all the crowd of his companions, who, the moment before, had been standing around them.

Of course his triumph was short, for he received a severe admonition from an authoritative voice, and made his exit very demurely; but he took away all his friends with him, to show them something else that he could do.

The sky being cloudy, there was little else for ourselves, except to go out on the circular balcony which surrounds the great dome, at a height of fifty-two feet from the ground. Walking round and

round there, we saw below us the roofs of the observing and computing rooms, the series of ladders by which the soldiers attached for the service of the establishment have to ascend on many a bitter winter night, when the cold is far below zero of Fahrenheit, and beat and thrash away at the hard frozen machinery for opening and closing the several observing-slits, until the ropes will once again run through the pulleys, and the shutters turn on their hinges. To the south-west and south-east were two more revolving domes, each of which, being twenty-two feet in diameter, might be considered first-rate in size anywhere but at Pulkova; and due south stood that unique contrivance, the "grand parasol" of the prime-vertical transit; *i.e.* a large screen, twenty feet high and thirty-eight broad, formed of open-work venetian-blind bars on a duly trussed scaffolding, and so arranged on the top of the roof as to keep, the broad slit by which rays of starlight arrive to enter the object-glass of the astronomical instrument below, in perpetual shade and protection from sunshine; while the shadowing object itself, being all apertures and thorough ventilation, never acquires an undue temperature.

From our elevated central position we also looked over the small detached observatories for the education of surveying and engineer officers, numbering no less than five smaller buildings, with seven

revolving domes amongst them; and further off, though yet connected by long corridors, were the large, many-windowed, red-bricked masses of the dwelling wings, containing, to the west, the apartments of the Director and the Acting Director, with their several families, and to the east, those of three assistant astronomers, the Librarian, the mechanical artist or Troughton of the establishment, and the "Intendant," an officer who looks alike after the commissariat, the police, and generally the due performance of all the muscular duties of the place. Enlargements to either wing were in progress, in order to provide apartments for four more assistant astronomers, to enlarge the optician's manufactory and allow him to engage and lodge more workmen, so great a demand is there for his Pulkova-made theodolites, and to extend the carpenters' useful workshop. Progress appeared everywhere; and such swarms of children in all the courtyards, the families, for the most part, of the soldiers of the establishment who live in the subterraneans of both wings, and highly appreciate the service they are on, for they may all marry upon it, and are only eligible after a long military career has been passed through with credit and honour.

The grounds of the Observatory, gently declining on every side from the summit of the hill, are about one-third of a mile square, and seemed from our

high position to be all green with grass and trees and the gardens of the inmates ; while past and beyond them the prospect stretches away in all directions over similar gardens of Pulkovian villagers, until it reaches the parti-coloured plains of the middle, and the blue lines of the extreme distance. A splendid view of the heavenly vault is thus left open to the astronomer, who, from the great equatorial can command a zenith distance of $90^{\circ} 5'$ on the south, and $90^{\circ} 16'$ on the north side, or $180^{\circ} 21'$ of the whole meridian. And on how noble a scale is this line, the meridian, marked out ! for the long, broad, and straight and even triple road from the Observatory to St. Petersburg, runs direct as an arrow for nineteen versts, and sensibly to the eye is in the meridian, clearly seen, therefore, in all ordinary weather for many miles, and additionally marked in the extreme distance by the golden spire of the church in the fortress which glistens in the evening sun like a needle of gold, three hundred and ninety-five feet high.

The far-away blue and nearly horizontal portions of the landscape were a never-failing source of interest to us. On one side you could just make out the commencement of broad fir-wooded tracts ; on another, frequent sails betrayed the existence of the shallow Gulf of Finland, deeply penetrating those nature-planted forests, and everywhere the flatness

of the country was something, not merely striking, but actually sublime in its wonderful extent,—everywhere plains interminably flat; but just as we admired, and really, from the bottom of our hearts praised these poetical and peculiar features, so did our companions call our attention to the “mountains.” Mountains, according to them, were on every side; and chief above all the mountain of Duderhov, the proved highest mountain in all the government of St. Petersburg.

Situated nearly thirteen versts to the south-west of the Observatory, this Duderhov is somewhat dwarfed by the intervening table-land in that direction; but when once pointed out, it showed us distinctly two separate summits, one of them rather more than a verst from the other. The western of the two heads being covered with trees, looks higher than its rival, but we were assured that it is not; for the southern, having been carefully measured, has an advantage of several feet, and attains in its totality full five hundred and sixty-eight feet of height; though if it be allowable to take the church which is upon it as constituting now part of its mass, then its whole elevation is not less than six hundred and thirty-six feet above the mean level of the Baltic Sea.

That usually accurate traveller, Kohl, is a little confused when he comes to treat of these uneven

regions; for whereas in his express treatise on the “Duderhov Hills” he places the imperial palace of Tsarskoe-Selo (see chap. xi.) right amongst them, they are really situated, as above mentioned, to the south-west, while the palace is to the east-south-east of the Observatory,—the exact bearings and distances from the centre of the equatorial being given thus by M. W. Struve and his expert trigonometrical assistants,—

	Azimuth, N. by E.	Distance in sajenes.
Duderhov Mountain Church	225° 35' 54"	5805
Tsarskoe-Selo Church	123 12 42	3412.

We recognized the truth of these measures, and the superior and enormous stature of Mount Duderhov, as was evidently desired. But most of all did the inhabitants delight to hear gentle praise of their own mountain “the mountain of Pulkova,” for so the Imperial ukase of 1838 expressly entitles it. The northern face of Mount Pulkova is even more charming than all the others, gushing out as it does with an abundance of springs of delicious clear water; crystal tricklings which, besides affording refreshing draughts to the wayside traveller even in the driest months of summer, may be seen percolating the ground in all directions, and developing the most beautiful carpets of grass; completely thereby preventing those fatal clouds of dust, that roll along the lower slopes of the mountain during

the arid weeks of June and July, from ever reaching the sacred precincts of the astronomical temple above.

On those delicious slopes too, waved over by luxuriant groves of long-limbed fir-trees and glaucous poplars, it is that invalids come yearly from St. Petersburg to seek health, and whole boarding-schools of young ladies of noble birth (*demoiselles nobles*), to find recreation and joy during their short summer terms ; while in all the more sheltered glens and hollows of Pulkova's crownèd mountain, which really numbers not much less than 2500 inches in height, are situated gardens that are prolific in the extreme, and indeed quite proverbial in Petropolis for supplying its markets with all the finest specimens of Hyperborean fruits, acid currants both black and red, and raspberries beyond compare.

“ Oh, say no more ! ” we exclaimed, “ for have you not overcome all our doubts and proved a Thessalian Tempé in Russian land ? ”

CHAPTER IX.

VERSTS, MILES, AND KILOMÈTRES.

August.

THE month of August was passing rapidly away, and still there was no improvement of the weather, but rather a degradation. The thermometer of late had seldom been above 54° or 55° Fahrenheit; the drawing-room balcony had ceased to be a pleasant station for after-breakfast talk; doleful winds moaned through the trees, rain often fell from the leaden sky, and not unfrequently thunder and lightning were added to the scene.

Yet the kindness of our hospitable friends in the Observatory never flagged. This was not autumn yet; they insisted it was still early summer in that country. "Behold the proof," they exclaimed; "our gooseberries are not yet ripe, the apples are perfectly green, and the raspberries only just coming up to their maximum point of maturity; the trees are

everywhere still growing, their shoots still terminating in soft unformed young buds of leaves, and you will not find a single withered leaf anywhere. We are perfectly confident too," added they, "that we shall have warm weather again; and you will yet see, as an astronomer, what a Pulkova telescope under a warm Pulkova sky is equal to in separating close double stars."

A promising evening soon occurred. The clouds during the afternoon melted away like magic, and the whole vault of heaven was pure and blue when the sun went down. Through the long corridors of the western wing—where at intervals we met either the significant feature of a huge Russian brickwork and earthenware stove, or a window filled with the aloes, cactus, and fuchsia plants of a southern land—we followed M. Otto Struve in his way to the instrument which has been peculiarly his ever since the foundation of Pulkova, viz. the great equatorial.

In order to avoid disturbing the observers at the vertical circle and transit, we issued from the corridors into the garden in front, where moderate daylight still existed, and by a circuit among the flower-beds approached the grand entry of the portico. A grim old soldier on guard, was instantly cap-in-hand, and had unlocked and pushed open the massy doors where we entered and ascended to the upper dome-room. There also the leader's presence had been

expected, and a veteran sergeant accoutred in his long green great-coat with golden echellons and military cap, had some time since got all the shutters of the dome thrown wide open from one horizon to the other, lamps lit, and every arrangement prepared for a whole night's celestial campaign.

After a kindly Slavonic word of approval, the Acting Director proceeded with the grace imparted by long experience and consummate skill to his own part of the task. He had a list of peculiarly difficult double stars to be scrutinized and measured, all of them within 1" of mutual distance. So choosing first, the pair nearest the meridian and with the brightest components, he set the telescope with ease to the desired place, by reference to the declination and right ascension circles.

Calmly were his movements watched by the eyes of the veteran sergeant, standing like an impassive pillar on the further side of the room; but the instant that the last motion had been given to point the huge optic-tube in its true direction,—the faithful servitor, without bustle and without needing any further word of explanation or instruction yet with extreme celerity,—firstly, chose from a number of seats, one that exactly suited the then height of the eye-piece above the floor, and placed it appropriately; secondly, he picked out from a collection of hook-joint handles, the one which was proper to the

distance of said eye-piece from the right ascension circle, connected it therewith and brought its end to the hand of the observer, already seated in the chair ; thirdly, the sergeant turned the windlass of the dome movement, until he saw that the object-glass locked fairly out of the opening ; and fourthly, he brought a small table with pens, ink, paper, and a lamp, close to the observer's elbow ; and then retired once more into that passive columnar attitude in which the Russian soldiers have so often, when it was their duty to do so, steadfastly defied death in all its horrors on many a glorious battle-field.

With his whole task thus lightened, and nothing left him to employ his own higher powers on, than, after deciding what should be observed, to observe it, M. Otto Struve's every motion told with full effect ; and we watched his style of proceeding as a lesson. First there was a rigid searching scrutiny of the object in the field of view by an eye of extraordinary nervous energy ; and the examination was repeated again and again with slight variation of position, until the telling moment having arrived, the micrometer screw received a dexterous final touch from thumb and finger ; then, with head thrown back at ease, the divisions were read off and duly entered in the manuscript observing-book. This process was repeated several times, until there was believed to be a fair representation secured of

the apparent condition of the particular object under observation that night ; and then another star was similarly taken up, the sergeant being ever at hand with the mechanical preliminaries exactly at the right time, and the astronomer left, therefore, with little to do except to complete the astronomical part of the observation.

Yet, alas ! alas ! it was not a little that he had to do either, though he did get through it in every instance with such apparent ease and with so polished an air ; for when I was presently allowed to take his place at the eye-end of the telescope, carrying at the time a magnifying power of twelve hundred on a pair of stars $0\cdot3''$ apart, oh ! what a scene was there. Never, perhaps I should confess this, had I before seen so close a pair of stars forced, by dint of high magnifying power, to stand out so far apart. But then what a state they were in ! Don't fancy, O reader, that there were two clear, clean, and sharp little points of light, like the representations of double stars, which are so easy to make by punching neat holes in an engraver's box-wood block, and printing from its blackened surface ; or that you had only to lay the micrometer wires exactly over two distinct stars, and so measure their distance at once. Don't even fancy that you could at all times see that there were two. On the contrary, you must look long and steadily, and then all

you can expect is, that there will be on the whole an idea of "duplicity" left on the mind, rather than presented to the eye; for in place of points or minute little disks of light, single or double, what you could see at any one instant, with the mere unreasoning sense of the optic nerves, was a sort of microscopic Medusa's head of twisting, twirling, filaments of light; or two such heads in combat at close quarters, with all their hundred luminous snakes wreathing and twining, disappearing and again making their appearance, and looking like anything rather than what a double star or any other star would look like if viewed through a homogeneous atmosphere.

What skill and practice must have been required to make anything accurate out of objects seen under such terribly bad definition! Our friend's skill was truly and plainly something extraordinary, for the to-night results came out admirably with the mean of many former measures; and we could fancy also notwithstanding appearances, that the object-glass of the great equatorial must be, *per se*, of remarkably fine defining powers as well as abundant light. But then, what far more important results would they not both of them, observer as well as instrument, produce, if raised up to the level of that Alta Vista Observatory on the Peak of Teneriffe, where at a height of 10,700 feet above the disturbing surface of the lower earth even the untutored eye of my

wife was able to see, three years ago, as difficult a double star with a telescope of only one-fifth the light; and had the satisfaction too, of seeing the said star steady, well defined, and just as a duplex stellar orb should be seen, and really is.

“Oh! but you must not judge of our Pulkova observing nights by this one,” was the ready reply; “we do sometimes have extremely fine opportunities. As for to-night, I do not think the weather is yet settled down from the late disturbances: the last star I observed was faint, as if from haze creeping over it; and only look, there is an actual cloud coming across the opening of the dome.”

So spoke the Russian astronomer; and on going out to the balcony, lo! many dark clouds had formed and spread over both the west and east during our observing period, and in a few minutes more they closed up all the heavens.

After such an untoward disappointment a retreat to the genial supper table was unavoidable; and pleasant was the change, especially as several of the assistant astronomers, their occupation being gone for the night by reason of the returning clouds, came dropping in one after the other.

Amongst other subjects there was some talk on standard measures; and our friends poked a little fun at us, in asking whether dear old Mr. So-and-so had yet got all the milestones removed from the

public roads of Great Britain and replaced by kilomètre marks ; and had established the French mètre as the only standard in all our country and colonies, for selling either broadcloth or butter, land or beer ? “ You don’t mean to say,” they went on with well-feigned surprise, “ that none of these improvements are yet carried out. Why that old gentleman eloquent was here in St. Petersburg some two years ago, and told us most positively that all Great Britain was blatant for the change ; that it would be carried out there instantly ; and that if the Russian Government would but just sign a little document, abolishing all their old national measures and adopting the new French ones instead, the ‘ mètre ’ would reign over the whole world as the one and only unit of measure for all the races of men.”

‘ Well ! and what did you answer him.’

“ Why we told the amiable greyheaded enthusiast that he had come to just the worst country in the world to get the customs of the whole people altered by a stroke of a pen. Nowhere is there such a compact mass of determined nationality as in Russia. Its country districts are unassailable by force from without. Its measures, its language, its customs, are based on a past history with which Western Europe has had nothing to do. Russia achieved her own freedom and rolled back the tide of Asiatic conquest without any foreign assistance. Much sooner

expect that your Queen can make her people with French measures adopt the French language and abolish their own, for the sake of promoting utopian uniformity over the earth,—than that an equally practical and self-helping but much more numerous nation like the Russians are going to abandon their own progressive development of what their fathers began, and nature has rendered eminently suitable to them,—in favour of paper schemes that will be about as lasting as the Parisian republic of 1848. Precisely as their own language best expresses the requirements of their own mental conceptions, so do their own measures of length give to Russians the best mental grasp of size, whether large or small, in material nature.

“And besides all this, and the empire that has been founded upon it, we can assure you that Russians are not so likely to take the French *mètre* very speedily to their hearts—because, next to their own, they are very fond of the English, measures of length. Indeed there is a bond of perfect connection between them, and the English foot *is* the Russian foot; for the Russian *sajene* is constituted equal to seven English feet, or its equivalent seven Russian feet. This is the law and it is rigorous. Hence a point at which the whole system of Russian measures may flow kindly into the English, and *vice versâ*; and they do so flow. Our principal standard *sajene* in

the Observatory was made in England, under the care of Mr. Francis Baily, of the Astronomical Society, and by Troughton and Simms as the artists, being, in fact, merely seven of your English standard feet ; and we use it in determining the length of our *versts*, a measure that will be immortal as long as Russian travelling endures in the world.

“Russia,” continued our host, “has her own task to perform ; and, as in the case of any able workman, should be allowed to know what tools suit her hands best, especially when few but herself know fully what her task is. Take, for instance, the mapping of the country. You have in England an excellent mapping establishment, the Ordnance Survey ; and there has been great grumbling amongst you because, as people say, at the rate at which the survey goes on, and that is the maximum rate at which even a liberal expenditure can push it, upwards of thirty or forty years must elapse before you will possess a complete map of the whole kingdom. Yet your countrymen often unthinkingly advise us to adopt exactly their method, without ever dreaming of what the consequences would be. Now there are some parts of the method that we like very well ; but, as to adopting the whole of it, why even if we were to succeed in it as well as you, and were to get over the ground per mile or per *verst* as quickly as you do, how long do you think *we* should have to

wait before we had a complete map of *our* country? Rather more than twelve thousand years!

“This was a difficulty not exactly superficial, though connected with superficies, that was already foreseen by the penetrating genius of Peter the Great, when our empire was much smaller than it is now; and he introduced a variation of surveying suited to the case; and consisting, in one word, in the development and application of Geographical Astronomy of a high order. Like most of Peter’s ideas, it has been proved by subsequent experience to have been the right thing, and is now being followed up more actively than ever as a settled plan of government. Hence Captain Smythlove’s expedition, of which you saw the conclusion a few days ago; and hence, too, we each and all of us sally forth every summer for the fixation of latitudes and longitudes, with an accuracy we hope, sufficient for giving the dimensions of a moderate estate.

“In special circumstances,” said M. Otto, “there is much linear surveying introduced also; and we have checks of all sorts to test the accuracy of our work, making extensive use to this end of ‘arc of the meridian’ measures.—There will be some comparisons,” he added, after a while, “going on to-morrow in the Observatory, of the base-line bars used on these operations: would you like to see them?”

Of course we liked; and repaired next morning

to the East Meridian Room where the operation was progressing. It was a comparison of the length of the several bars used in measuring the base-lines in the field, with the standard bar always preserved indoors. The general appearance was not unlike the similar operation performed in England with Colonel Colby's "compensation bars."

The Russian bars, however, were simple and solid steel rods; and instead of measurement by microscope it was by touch.

We were curious to see how they overcame the usual English objection to this method, seeing that if you bring up one bar actually to touch another, you must drive it a little back, and so make an error in the measurement that will go on continually accumulating with the greater length of the base-line.

Their method proved to be neat and probably most effective. The one heavy bar, near eleven feet long, made heavier still by its thick wooden containing box, out of which the ends only projected, was never allowed actually to touch the solid mass of the other bar, but merely a slender lever of touch carried by it,—a delicate, and for size, watch-work thing, acted on by a spring of very light pressure: this therefore, might safely be touched and even driven back several divisions of its scale, without appreciable disturbance of the weighty mass of solid metal to which it belonged.

True ; but then if the terminal point of the bar was not the simple end of the bar itself, but a piece of moving machinery, how did they prevent the prejudicial effect of looseness and play of pivot-holes from apparently lengthening or shortening the dimensions of the bar ?

Their plan here was also practically unexceptionable. The lever of touch moved on a transverse axis, whose ends were nicely-turned small-angled cones ; and the bearings of these cones were, on one side, a socket-hole of similar conical figure worked into the substance of the great bar itself ; and on the other, a like conical aperture in a steel plate, very firmly screwed to the side of the bar, after its thickness had been nicely ground down to such a close adjustment, that the conical-ended axis not only was not loose and had no play, but experienced a decided close pressure ; and yet with so little friction as still to rotate quite easily in its legitimate path.

Each bar being thus terminated with a moving and graduated lever at one end, and at the other a small portion of a spherical knob of hardened steel, with a radius equal to half the bar, their lengths could only be compared with each other by submitting each in turn to an intermediate apparatus somewhat similarly armed. And a very pretty sight it was to watch the manipulation of the two Russian

military officers, who, under the superintendence of one of the assistant astronomers, were performing the service. Their laced coats, epaulets, and golden tags on their shoulders, looked at first rather out of place; and the knightly growth on the upper lip might have been expected to typify the proud disdain of the military class of most countries for low civilian work; but here the superlative manner in which these gentlemen addressed themselves to the affair, as, simultaneously and in a moment, lifting up one of the weighty boxed-up bars from its resting place they deposited it on the two supports of the comparing machine, without any audible shock; adroitly turned up either lever or screw for bringing bar within given horizontal line; corrected cross level; measured longitudinal level; brought bar to a zero point in its own length; and then, tap, read off two thermometers fixed in bar; tap, up with two Pulkova magnifiers set in long handles, and with as much pleasure and as much grace as a dandy could show when handling his walking-cane, read off at a distance, and without breathing on them, the scales of the levers of contact; and, tap again, the thermometers once more. The manner, we say, in which these officers performed all this work, plainly showed that their sympathies were enlisted in it, and their ambition to excel was aroused. Hour after hour, untiringly the observations proceeded; and on our

looking over the comparison book afterwards, nearly every and even the minutest apparent variation of the length of the bars had its explanation and means of correction in an accompanying and corresponding small rise or fall of the thermometers.

From this interesting proceeding, the acting-director presently called us away to see some leveling-staves and a telescope-instrument, similar to several which he was now employing on an enormous levelling operation recently commenced, and intended to be carried right across Russia from north to south, or from the Gulf of Archangel to the Black Sea. And it was while we were admiring the principle as well as the construction of these instruments, that he suddenly assumed rather a mysterious expression, and probed us with an unexpected query.

What that query was, we may as well leave for the next chapter to explain.

CHAPTER X.

A MILITARY DISTANCE-MEASURER.

August.

WE were standing, then, under the grand portico, among the levelling instruments that had been brought out for our inspection by soldiers attending, when the acting director put to me the following question :—

“Can you,” said he, “measure the distance of an object of unknown size, merely by having a view of it for a moment from just the one little spot of ground where you may chance to be standing?”

The answer came quicker than he had, perhaps, expected; for the problem was one that I had been accidentally induced to take up some few years since, to meet a case of scientific difficulty and awful waste of powder, shot, and shell, which the newspapers reported to have occurred one night in the earlier part of the Crimean War. I confessed as much to my

friend; and also told him that my solution of the difficulty consisted in knocking together an instrument on a principle enabling it to carry its own base line.

“ Well now, how strange !” he replied, “ for my instrument is on that plan, and was devised to meet a case that occurred, or was expected to occur, about the same time at Cronstadt. And what was the length of your instrument ? ”

“ Five feet.”

“ Five feet !—why, that is just the length I chose for mine ; and here,” said he, “ it is,” as he brought out of an adjacent store-room a five-foot wooden tube, armed with certain optical fittings, and resting on a three-legged theodolite stand.*

The instrument thus produced was, therefore, what may be termed a distance-measurer for purposes of gunnery ; and an exact knowledge of distance is a most important object to be secured, as Great Britain now knows so well, whenever accurate firing at long ranges is required. But though knowing the general fact, all our countrymen are not perhaps quite so well aware of what constitutes the only correct principle on which such distances can be absolutely deter-

* I have lately been informed by my esteemed friend the Rev. Dr. Robinson, of Armagh, that both M. Struve and myself were preceded by the late Dr. Wollaston, who constructed a distance-measurer on this general principle, and three feet long, for one of the early Polar voyages. What was its ultimate fate, has not transpired.

mined ; for otherwise they would not be so well content, as too many of them are, with certain routine rules depending on degree of visibility—a quality which any changes in the transparency of the atmosphere, or in the illumination of objects, and still more, the absence of objects having a right form and size, may render utterly erroneous—and on some other illogical systems.

I was called on, for instance, while still in Edinburgh, and just before starting for Russia, by the inventor of a certainly very neat plan of moving to an equal amount, and in opposite directions, two micrometer wires in the field of a military telescope ; and much he, the inventor, wanted me then and there to give him a testimonial that his contrivance was an infallible means of determining distances for all the purposes of gunnery.

The distance was to be ascertained, be it understood, by measuring with the two wires the angular subtense of any man who might be seen at the spot whose distance was desired to be known ; and then, on assumption of his height in feet, computing how far off he must have been, according to the usual rules of plane trigonometry. An excellent plan this would be doubtless, if you were always certain of seeing a man on your exact shooting ground, and if the said man was always six feet high, exactly, even to the hundredth part of an inch, neither less nor

more ; but a very misleading plan if the man be not of that height, and an impossible plan if merely part of a man or no man at all be visible—as when a rifleman has hid himself, partly or completely, according to approved sharp-shooting tactics, behind a tree or a stone wall. But to all these objections against the principle of his plan, the inventor only returned the stereotyped excuse for answer, that a man is *always* assumed by military authorities to be six feet high for the purpose of distance-measuring ; and a certain regimental officer, to whom he had shown his telescope with the two wires, had told him only the day previous to his visit to us, that he had never in his life before seen so scientific an instrument.

“ Oh, then,” said M. Struve, after hearing a portion of the above, “ a pretty mistake your British inventor, and the officer too, would have made upon some of our Russian soldiers, according as they had seen in the distance either one of the Brèò-brèjenski Guard, who stands with his bear-skin shako, above seven feet high ; or a little Finlander sharp-shooter, who, with his flat blue-cloth cap and short stature, is under four and a half feet. Yes indeed, a pretty mistake ; for the real distance might have been almost double, or only half, of whatever the telescope and its micrometer wires had caused it to appear.”

Now M. Struve’s own distance-measuring instrument depended on no such varying and distant base

line as that just described, but on its own length, which was a constant, evidently capable of being determined with the greatest precision ; and its action was thus :—When you looked at any object transversely through one end of the instrument, certain reflectors gave you a view of the same object as seen from the other end also. Hence resulted, optically, two images of everything you looked at ; and these images were always separated by a quantity precisely equal to the apparent length of the instrument itself, as it would be seen from the place of the object under observation. The measure, therefore, of the separation of these optical images became equal, on a certain scale, to a measure of the distance of the object from the observer ; and thus, this desired result of distance was quickly arrived at, and without any assumption of the nature or size of the object observed ; while the method was equally applicable by night and by day, if only a spark of light, or anything with a definite edge, or portion of an edge, were visible in the field of view.

Such then was the distance-measurer devised and constructed by the Russian astronomer, for improving the accuracy of fire in the guns at Cronstadt.

But was it used there ?

Well, thereby hangs a tale. The inventor urged the employment of the new instrument on the war-office of his country, but was always told that present

methods were good enough, and no others were wanted. He pressed the authorities therefore, with the case of an enemy's ship, holding her men concealed and coming up slowly with designs of mischief, to one of the forts; how would they then, at any particular instant, determine the distance? Oh, they would fire a shell or two and find out by the drop.

"Why, the expense of one firing," returned the astronomer, "from one of your large guns would supply every fort in Cronstadt with a distance-measurer! And will one firing be enough? Can you always see where your balls go to, say at night, when you want to pitch your shot just into the ports of an iron-plated frigate; and when, if you don't succeed in sending them into those small openings, all your expenditure will do her no harm, and your country no good."

Then the astronomer followed up that reply by getting one of the officers out to the Observatory on a dark night, and there showing him in a telescope, pointed to that straight road we have so often mentioned as leading right away to St. Petersburg, a single distant carriage light, with the request, "Will you oblige me by telling me the distance of that light?" But such a question was declared to be absurd; for a single light, of unknown size and intensity, just seen looming through the darkness and snowy haze,

without anything to compare it with, gave no recognized means of mensuration. "Then you shall see," responded the astronomer, "how easily my distance-measurer will solve the problem," and in half a minute the distance was stated in national sajenes; and in a few minutes more, by a second and third measure, it was proved which way the carriage was moving, to or from the observers.

There was no resisting altogether such a demonstration as this; so a select board was presently appointed to report on the instrument, and the inventor's hopes ran high. Who is there, too, who could not sympathize with him? for had he not invented a something, in the time of his country's direst extremity, that might be of vital service to her; and now he was going to see her adopt and profit by his invention! After having been all his life in the ill-understood and worse-appreciated position of merely a "*savant*," of only an improver of difficult points in the arcana of science, comprehended by few in the present age, and looking rather for approval to the mind of posterity, he was now about to take rank amongst his countrymen in time of war, as one who could give them effectual help in their national measures for resisting a forcible invasion of their common fatherland! Alas! for his patriotic hopes; for he heard one morning soon after, that his cherished invention had been condemned.

Why and wherefore? he earnestly inquired. It could not be because the principle was deemed defective, for that he had mathematically demonstrated to be true; and surely not because the principle was inefficiently carried out in practice, for the optical work was in the highest style of finish peculiar to the best astronomical instruments.

Oh! on no such reasons as those, he was told, had sentence been passed: and so it proved. Great officers of state, it seems, in all countries have shorter methods of proceeding than those painful and laborious processes which are followed and thought necessary, by plodding scientific men; and something like the following turned out to have been the very compendious system on which the high officials had proceeded in the present case. They began by laying down the dogma, that any really good modern invention in Russia must have long since been discovered in England; and, if discovered there, would, as an equal matter of course, have been brought into use by the British Admiralty. They had then therefore, only to inquire, whether any instrument like M. Struve's was presently employed in English men-of-war; and having found on inquiry that no such apparatus was nowadays known there (see note to p. 157), they considered themselves to have arrived, logically as well as commendably, at an undeniable proof, that the distance-measurer of the astronomer

of Pulkova was not, and could not be, a good or useful invention.

These matters might long have remained, had not the *Russian* Admiralty the unspeakable advantage of being presided over by a chief who is not only a politician, but also a really learned as well as practical seaman, fully understanding naval affairs, because he has worked at them with able head and ready hand from his earliest years. This chief is the Imperial Grand-Duke Constantine Nikolaievitch; and some rumour of the matter above-mentioned having chanced to reach him, he instantly ordered all the parties down to Cronstadt, there to try the new instrument in his presence, and ascertain its capabilities in the open air. The season was winter, a Russian winter too; but under the Grand-Duke's all-compelling supervision, long lines were soon measured over the ice in radiating directions from one of the outer forts; and on poles or other marks being erected at the end of such lines, the distance of each object was instantly given by a man with the new "distance-measurer," who did little more than merely look at them out of the cannon embrasures. These determinations being presently compared with the notes of chain-measures on the ice, produced such a conviction in the mind of the inspecting chief, that he at once empowered the astronomer to construct a large number of his absolute distance-meas-

surers for use in Cronstadt. Hence the Russian Artillery has now, most probably, a more exact, economical, and scientific means of measuring distance, than either army or navy of any other European power can show; unless indeed, my friend Colonel Henry Clerk, R.A. may recently have been allowed to bring into employment at Woolwich certain very similar contrivances of his own.

Since writing the above, I am informed that in the present year (1860) two eminent London opticians are bringing out very creditable distance-measurers, embodying more or less the principal features of M. Struve's instrument, though under different, and in some points perhaps rather improved, arrangements. There is at least one point, however, and a very important one for the accuracy of the measure, in which M. Struve's apparatus is superior to any that I have seen or heard of as yet made in this country: it is, in the quality or clearness, sharpness, and brilliancy, of his reflected images. These are with him so markedly superior, from his employing large and perfect totally-reflecting prisms, instead of silvered glass or speculum-metal mirrors. These two latter are always the favourites with our own opticians; and if you demand from them a totally reflecting prism, it is strange how generally they make you wait a long time for it, and then send you one that acts very badly. You complain, and are

then told, that "if there was more demand for such reflectors, your humble servants could easily make them true, by polishing a large number at once ; but at present, is it worth their pains to try?"

Meanwhile, and until a popular demand arises, you are left to cross the Channel to come by a good totally-reflecting prism. In France you begin to find them, and in Germany they abound, culminating at Munich and from thence spreading in goodly supply through a large part of Russia.

The solid steel fixings of M. Struve's noble prisms were also well worthy of remark, and of imitation too in a nation almost wholly given over to the flabby, corrupt practice of using nothing but brass for the framings of their optical instruments. Harder, tougher, lighter, and less expansible by heat, why is not steel more insisted on in the nineteenth century by those who want the best astronomical circles that human ingenuity can construct with known and tried materials?

By this period of our Pulkova visit, some photographic apparatus we had brought with us from Scotland, but left on board the steamer at Cronstadt, had been passed through the Custom-house, and safely brought to the Observatory; so day after day, as long as any chemical light endured, we hammered away with a couple of stereoscopic cameras, wet collodion and dry, at both the front

and back of this splendid building and its various surroundings of interest. Among the latter was a peculiar one, and national,—a mass of granite boulders, brought, time out of mind, by preadamite glaciers across existing snows and bogs from Northern Finland mountains, and now lying quietly on the edge of the Pulkova hill, overshadowed by firs and birches. There they form the only hard stony matter to be seen in all the country round, and are said to have served as a favourite seat of Peter the Great; for from hence he used to contemplate the broad alluvial plains about the mouth of the Neva; and then and there, sitting on that very seat, did at last determine one clear morning, that, marshy though the country might be, and enemies' soil also at the time, he would nevertheless erect the new capital of his empire on no other spot.

This boulder-seat, therefore, of Peter the Great, the effective birth-place of the present imperial metropolis, St. Petersburg, was an important object of our photographic ambition, and the plates we spent on it were not a few; for our object being, not only to get a verisimilitude of the trees and stones close by, but of the characteristic Russian flat in the distance, with a road like a straight clean knife-cut dividing it up to its uttermost parts, also—a small aperture was necessary to secure good definition of the near and far; and with that small aper-

ture came many troubles. It entailed for instance, to begin with, long exposure,—a nuisance at any time, and additionally so here when the gusty west winds, ever blowing, blowing, seldom allowed many seconds to pass without wildly waving up and down all the delicate leaves and branches that formed a net-work of tracery against the sky ; and unhappily the exposure had to be even outrageously long, for the heavens were ever heavily clouded and water-laden, while under the trees a dense green shadow almost destroyed photographic action.

The weather was too cold during this period for the little girls and their teachers from the neighbouring boarding-schools to visit their favourite haunt, and enliven the spot where the Great Peter had once sat, and where his memory still lingers in the hearts of the people ; but many an attentive Slavonic man passed by ; and one of them seemed so particularly interested in what was going on, and was so ready in smoothing the ground for the feet of the tripod stand, and doing anything he thought could help, that we at last allowed him to look in and see the stones and trees of Peter Veliki memory, pictured on the ground-glass screen of the camera.

He was delighted ; gazed and gazed again ; and then having disappeared for a time, presently re-appeared before my wife with a little basket of choice gooseberries, which he would have her accept, and

which he must have selected with care, for they were the only fully ripe ones we had seen in Russia yet ; and this, be it known to all good housewives, was a full month later than the date at which that best of ladies had completed at home and in Scotland (spite of its complained-of backward seasons), completed we say the whole of her exquisitely prepared "1859" stock of preserves, from strawberries, gooseberries, and currants, black, white, and red, and then announced herself ready for the Russian trip.

When the day's photography was quite over, and the camera just packed up, the same big-booted man came to us both again ; and evidently, by his manner, cap in hand, earnestly begged the honour of a visit to his little garden. So we followed the way he led, through a wicket in a stout lilac-hedge, and soon found ourselves amongst large sprawling bushes of sharp-set northern fruits. He lifted up one branch, and lo it was a thick and almost solid mass of gooseberries, as close and numerous as if they had been a swarm of bees. He lifted up another branch, so long it was that he could raise it as high as his head, and it exhibited a similar closely packed profusion of magnificent, long-tressed bunches of red currants. Thus he went on from one bush to another, not boasting of what *he* had brought about as the gardener, but always with such a modest grace, and so

much good feeling in his manner, that though we could not understand a word he said, we felt sure it was something to this effect :—"See how bountiful is the great God, who rules in heaven above and earth beneath. What are we that He should care for us, and yet behold the riches He has thus abundantly bestowed. Man toils as it is his duty to do, but it is God who gives the increase."

This sentiment we have since had reason to believe, is widely spread amongst, and deeply felt by, a vast majority of the Moujik population of Russia.

CHAPTER XI.

COMMENCEMENT OF SIGHT-SEEING.

“WELL, if you will leave Pulkova for awhile, and go into St. Petersburg until my father returns from his long European tour,” said M. Otto to my wife and self one morning, “you must at least allow me to take you this day to one of the sights which, though properly of the capital, is more easily reached from here than from there, viz. the Imperial domain of Tsarskoe Selo.”

“Oh! that will be charming,” we could not but exclaim; “they make a great deal of that grand Palace in the guide-books.”

“Yes; and a very little of us and the astronomy of the empire,” was the answer. “There is one of your guide-books in England, one of the tiptop red ones too, which utterly ignores us, Peter’s seat, the Empress Elizabeth’s Siberian cedars, and every-

thing that lies within a circle of several versts around. There was a new edition of that guide published in London this very year, and therein may you read, in their route from St. Petersburg to Tsarskoe Selo, a distance of twenty-three versts and we on its nineteenth verst, that near the third mile you may see the two sculptured bulls of the cattle-market, and at the fifth the château of Tchesme; but after that *nothing* but the few and far-between large verst-stones by the side of the road, until you arrive at Tsarskoe. He must be a funny fellow, the editor of that particular red-book; for after having thus specially immortalized the plaster bulls and Tchesme, and from them jumped right over our heads to the Imperial Palace, he defends himself by asserting 'there is no other object of interest on this road.' And then, with that for the closing of one paragraph, he opens his next with the intensifying phrase, 'we have described the road!'"

However our friend could not dwell long on this little matter, as he had many affairs of business to settle before leaving; reports to receive, and proof sheets to revise. Presently a messenger was wanted; a shout was given from the portico; but where was the messenger to come from? Among the flower-beds in front a man had been at work; there were his garden tools; ay, and there lay him himself, profiting by the leisure hour of noon and a gleam of sun to

lie face downwards, and all stretched abroad on the turf, in the fullest patch of sunshine he could find. Quite a painter's example of the relaxed was this man; so loosely thrown out at random and in such ecstatic liberty was every limb; his full, but thin, and pink outside shirt, so free to every motion; and the big cavalry boots, with the baggy draperied trousers, seemed to intimate such perfect independence of thought and will, with unlimited tramping power and vagrant propensities. What class of the population could this free and easy figure possibly belong to? The shout soon manifested; for in a twinkling of an eye the figure had jumped up, seized—from underneath a large scarlet-berried elder-bush—a neat roll, which on shaking out proved to be his grey great-coat with echellons on the arms and decoration on the collar, and having in a trice invested himself with this from his neck to his heels, and caught his military cap from a dahlia-stick close by, there he was at once as complete a type as you might wish to see of the Russian soldier; impenetrable to everything, but merely to receive the orders of his superior and execute them to the uttermost. Not Matthews himself could have more suddenly or completely effected such a transformation; but here it was all impromptu, and in the way of duty.

Soon after four o'clock P.M. the open carriage was ready, and away we started under the convoy of

M. and Madame Otto Struve, with two fleet horses, directing our course towards the south-east.

Through Pulkova's long moujik village we travelled, with its wooden houses of solid foundation and gaunt structure, but touched up always about the gable ends with delicate fancies in carved wood-work, and then we launched out on the open plain, grassy generally, and with its only adornment consisting in the verst-marks. Now though, no longer those Frenchified pastrycook affairs, one sees near the town, of half-a-dozen different sorts of marble, combining after all into a very poor whole,—but the national verst-mark, a thick square wooden post, painted diagonally, or zebra fashion black and white, so as to have the elements for being as distinguishable in the snowy white fields of winter as the dark-green of summer.

Not quite free were we from the Observatory yet; for here and there stood wooden triangular frames, with infinitely sharp apexes, fixed little lone sentinels over the surface of the country; and these were the signal-marks employed not only in some surveying experiments, but also in the accurate determination of certain large distances, whereat had been erected those “artificial double stars” by the observation of which with the great equatorial M. Otto Struve had recently ascertained the laws of certain corrections required to the true double-star observations in the

heavens—corrections depending on natural imperfections of the best human eye, as an accurate intermediary instrument of measure.

In a few minutes more a railway was crossed, on a level, and soon after we entered the grounds of Tsarskoe Selo. Mile after mile of newly-planted tracts we first drove through, then passed more gates and entered a longer-established portion; then a good imitation basaltic-columned archway, and beyond that, on the smoothest of roads went bowling along amongst really exquisitely beautiful glades and vistas and groves, for ever of birch and larch and spruce fir; and spruce fir and larch and birch. There was sameness certainly as to species of tree, but never, never had we seen the peculiar class of beauty which by nature is implanted in those trees so admirably brought out before. Spiry, more or less, all of them in growth. Stern and dark the spires of the spruce; brighter and more kindly, just as regular but more ornate, the spires of the larch; and should all these spiry needles form too uniform a serrated edge against the sky, behold the elegant birch with waving lines of silver bark; as aspiring in its growth as any of them, but withal so modestly drooping its pendent arms. Poor thing! she could not help it; it was not her fault; she had never meant to put herself forward so prominently there, and show that she was taller than a tall forest

tree; and therewith, at the mere mention of it, she bashfully inclines all her fair white branches. Oh! those too-bewitching white branches, for they will always persist in falling in such graceful curves or presenting themselves in flowing lines of such entrancing beauty as inevitably to call attention to her again, more distractingly than ever.

The proportions, positions, and circumstances of the several varieties of tree were continually altering: on one side a dense thicket; on the other, small isolated tufts merely; then were winding alleys; then sweet glades, opening out distant vistas of wood-surrounded lawns; for everywhere in that park was there the smoothest, richest, and completest of grassy surface, close up to and even under the trees, so different from what it is usual to meet with in a fir-plantation at home. The carriage, thus whirling along smoothly and rapidly, gave us without any exertion of our own, these kaleidoscopic changes of northern park scenery—how national in its kind, and how suggestive to fancy! Talk of the *rude* North, we thought, as it passed in review before our eyes, certainly not in its vegetation! Put in here either a sturdy old English oak, or a mushroom-headed Italian stone-pine, or a broad-leaved sycamore, and how rough and clumsy they would each appear. But look at these fairy-leaved trees of Tsarskoe Selo, and then confess, “Oh! surely the North

is the birth-land of quaint legends and elfin tales, of Gothic architecture, and all the nameless graces of feminine arts and ways !”

On and on drove the carriage. The park, said twelve years since, to be eighteen miles in circumference, may claim that size at least still, if even it has not been enlarged considerably beyond ; but we were now beginning to approach its central regions, as typified by elms and limes appearing among the other trees, with glimpses occasionally of summer-houses, keepers’ houses, and model palace buildings, with many crossing roads. A little more quiet driving, and then we leave the carriage ; and after a short walk over lawns through openings in tall green hedges and across paved causeways, we enter a large gateway in a row of long, low, barrack-buildings, and there, on the opposite side of a huge flat square, or rather esplanade, parade-ground, or field of Mars, there is the Palace of Tsarskoe Selo.

What a building ! It somewhat perplexes the eye at first by its peculiar painting : strong green the roof, a shade of light green what may be called the white of the walls, a dark bronze-green all the decorations (gilt in the great Catherine’s time) ; but this green effect is presently got over, and even declared to be good ; and then comes on us once more the sense of vastness of the whole building. Many-storied in height, and each story of imperial

proportions ; but the length ! we turn round, further round, and further, to let the eye take in from the centre all the length extending westward ; then down the long perspective of arched windows, and bassorilievo porticos, and bronze-capitalled columns, and frequent bronze balconies, we came again to the centre ; and then turning ourselves round, further round, we follow the building towards the east, the far east, where it is surmounted by five golden domes of the imperial chapel. Beyond that, wings stretch out northward, and then we come to the barrack ranges again.

“ Surely you don’t mean to say,” we exclaimed, “ that this Brobdignagian palace is no longer inhabited, merely because it once belonged to an emperor, Alexander I., who is now dead ! ”

“ Of course we don’t,” replied our friend ; “ we don’t, though guide-books may. The Russians are far too practical a people for such an objectless waste as that would be. It is still an Imperial residence, and a favourite one. It is only within the last few days that the present Emperor left for Peterhov, with all his suite of a thousand attendants.”

“ One thousand attendants ! ”

“ Well, if not that exactly, something over nine hundred ; purely civil servants ; for the soldiers who accompanied them were separate, and amounted to

many thousands." M. Struve stated the number exactly, but we did not catch it at the moment, and forgot to ask him again subsequently. Something else, too, more pressing or more pointed, had turned up; for before we were aware of it, we had accidentally grieved his patriotic feelings by remarking, that, large though all the panes of glass were in every palace-window, yet they were curiously wavy and uneven; in short, were of strangely bad glass. He could not refuse to allow that they did distort and freckle all the light of heaven which fell upon them; but then, that any stranger should go away with the impression that they did not understand in a Russian palace what good plate glass was! Oh! it was a cruel cut; but nevertheless borne so meekly. Quietly he led us away from that north front, and round by the far-off eastern end: asked us there if we would like to see the inside of a Greek church (not the Imperial Chapel in the palace, but the village church of Tsarskoe Selo), and therein let us feast our eyes on the richly-decorated interior, gorgeous with gilding, and plated pictures set with precious stones; in particular one of the Virgin and Child adorned with almost every known gem, from the diamond downwards, and said to be one of the richest and most valuable pictures in the empire;—led us on further to the southern side of the palace, and at last coming to a large district of

the building, where white marble statues abounded, his pent-up feelings broke out, as he exclaimed, looking up to the windows, "There, does that plate-glass satisfy you?"

It did perfectly; for it was pure, polished, and flat, sufficiently so for many experiments in optical science, and set off the neighbouring architectural adornments admirably.

We then wandered away, with minds mutually at ease, among the multitudinous gardens; in their flower department noticing large flat boxes, by means of which a never-failing succession of floral displays is kept up in certain spots all through the season; and coming at last to a lake embosomed in trees, and adorned with ornamental boat-houses, fishing-temples, and Eastern kiosks, domed and minareted, the roofs of some painted green, others rich laky-red, and one or two gilt. This one had been erected by the Emperor Nicholas for the delectation of his naval son, the Grand-Duke Constantine; that one was one of the first erections of the Empress Anne, when the park was forming; and that larger one, on the opposite side of the water, is the Hermitage so called of the park, where the Empress Catherine in her later years loved to retreat with a few chosen friends, when desirous of avoiding for a time the frivolities of state. Servants were indeed there, French cooks, too, superlative; but no menial

ever entered the select circle in the upper chamber, where, at a given signal, prepared dishes ascended by talismanic machinery to the table and were removed again by the same invisible agencies. And in this courtly retreat ensued many of those brilliant conversations with men of learning and letters, where each *savant* or philosopher in turn ascended his hobby, and set forth before the large-minded Empress his schemes, and his crotchets, and Utopian theories; and she, with national motives and acute judgment, selected many of their ideas, reduced them to fact, and made them law to her millions of people.

Neither were her more practically working subjects forgotten, so far as triumphal pillars and architectural monuments could honour their often invaluable services to the State. Thus Romanzov, the veteran patriot and honest field-marshal, conqueror of the Turkish armies on the Pruth, "the old-man warlike" of Russian poets, was there remembered. So too were the Orlovs, alike the sanitary reformer of Moskva, when that city was deeply smitten with plague a century since; and the naval victor of the Turks at Tchesmè. In this first of Russian successes in classic seas, English officers distributed through the fleet were no doubt of most important aid in securing the fortunes of the day; but it is well to remember, that the Russians universally attach the

highest qualities of generalship to their own commander-in-chief on the occasion ; and hence Derzhavin, in the conclusion of an ode inspired by the early death of the hero, thus apostrophizes him :—

“ Where is his fearful thunderbolt ?
Where do his forked lightnings sleep ?
Where is the bosom nought could fright,
The piercing, penetrating mind ?
'Tis all, 'tis all enshrined in night ;
He left us but his fame behind ! ”

J. Bowring's ' Russian Poets,' p. 43.

The lake seemed full of fish, and large ones. The earth too, brought forth abundantly, so large-leaved and flourishing looked the lime and other deciduous trees. The grass was everywhere smooth-shorn ; the walks exquisitely clean and well kept ; grottesque seats, ornamental fountains, statues in marble and bronze, both new and old ; in short all things that could prove abundance of present wealth, added to the fruits of former long-continued princely expenditure, were distributed over even acres of ground. We were growing wearied with the profusion ; and as it was not one of those days when the interior of the palace could be visited, and those oft-described Chinese and amber apartments of the Empress Catherine, or the modest and touching sentiment-exciting room of the Emperor Alexander I., could be seen, the evening moreover wearing on apace,

our carriage was sought, and we were soon driving back once more through those charming combinations of Northern trees that form the woods of the park.

An ominous darkness, however, now began to dull the appearance of everything around, and when we had passed the last gate, not only were rain-clouds in profusion, but there was one special black mass giving vent at intervals to thunder and lightning with streams of rain, just rising over the southwestern horizon, and threatening to cross the Pulkova road in front of us.

"Now," said M. Struve, "you shall see what Russian horses can do;" and he gave the word to the driver to get before that cloud. "Ho!" said the driver to his *golubtchiks*, *i. e.* darling little doves of horses: and away they went like the wind. M. Struve liked to be exact, so took out his seconds watch and noted the passage of the verst-posts. The carriage flew on with rather a reeling gait, and *Madame* said that she should scream; but *Monsieur* asked, "What would be the use of that?" so the lady thought better of it, and became even very brave, and presently enjoyed the racing pace as much as any one.

The cloud must have been low, for we soon got under some of its advanced filaments, and then, after an exciting course, had fairly got its whole mass

behind us, and a nearly serene sky in front. Our rate was then slackened, and the watch observation announced 3·5 miles to have been performed in seventeen minutes.

It was about nine P.M. when we returned to the Observatory through Pulkova village. The fine termination to the evening had brought many of the rustic damsels out into the open air, where, sitting half-a-dozen together on rude benches before the cottage doors, they sang strange Slavonic songs in parts and with intense refrains. Some Mamma too of noble rank, from a distant country-place, seemed to have taken the opportunity of visiting her daughters at the fashionable boarding-school's country quarters, for at those gates was standing a small travelling-carriage, with three pretty little punchy chestnut ponies to draw it; the middle one, stiff and solemn under its dominant arch, those on either side looking about them in a free and easy manner, in their fatness like young hippopotami. They were decorated rather than confined, or coerced, with a few loose bands, of strong leather harness we supposed, though they seemed externally to be composed only of wreaths of brass roses, that glittered in the evening rays and formed graceful festoons about the well-fed sides of those truly model little horses for young ladies to drive.

Far away in the azure twilight in the north-west,

great purple banks of cloud, with crimson edgings, were forming once again and the west wind had not ceased in the distance, for ominous cannon-sounds came booming on the air from time to time in the direction of St. Petersburg. "What are they firing for so late?" we asked.

"The waters are rising."

'Is there a flood then from the late rain?'

"Oh no!" we were taught, "the Neva, with its short broad channel between the inland sea of Lake Ladoga on one side, and the outer sea of Finland's gulf on the other, is never affected by rain; nor by tides either, which are insensible in the Baltic; but when the west winds blow long and with much force, they heap up the waters of the gulf precisely towards St. Petersburg, and at times threaten to submerge it far and wide. The risings from this cause are often very sudden, and it has therefore been appointed as one of the most important duties of the artillery in the fortress to fire a gun whenever the water reaches a certain height; and to keep on firing it at stated intervals, as long as the water remains at that height; and quicker and quicker if the water rises higher, so as to give the inhabitants warning and time to prepare to fly, if necessary.

"But the intervals of the guns are wide now," said our host, after listening for a few minutes, "and there is no present cause for any alarm."

The next evening we had taken up our residence in St. Petersburg; and many were the matters that came to occupy our attention before we had again to consider the chances there might be of witnessing a flood of the Neva.

CHAPTER XII.

ESTABLISH OURSELVES IN ST. PETERSBURG.

August.

“FOR the glorious purpose of real enjoyment and to be comfortable in St. Petersburg, you will follow my advice and go to Miss Juanna Bull’s, on the English Quay. You will be treated there most luxuriously, fare sumptuously every day, and have English dishes and English cookery. Nothing but English will be spoken; you will meet all the English who are in the city at every meal; and, in fact, hardly know that you are out of England, for even the Russian porters will be Anglicized in costume, and every Ivan when asked his name will show his superior civilization by saying, ‘It is John, Sir.’”

Such was the advice we received from a big and portly man of Brandenburg extraction, who propounded maxims with unmistakeable pomp to all around him. And when he launched forth still fur-

ther in praise of this favourite boarding-house for the engineers and inventors, doctors and musicians, who year by year came prowling for their prey to the Russian capital; and when he would almost insist on our promising then and there that we would go to no other quarters in St. Petersburg, we ventured at last, in mere self-defence, to suggest whether it were quite certain that there would be any vacant rooms in so highly prized an hotel.

“Oh, never doubt,” was the answer, “only use my name, and you will find it an *open sesame*. The charge is but eight rubles a day, and that includes all your meals; though you must take care to conform to the rules of the house, for the Miss Juannæ are very particular in keeping to their English hours for luncheon and dinner.”

There was evidently no escape without making a counter-move; so said we, turning to our well-tryed friend of the Observatory, “How vastly desirable a house of sojourn must this establishment of the Miss Bulls evidently be, for all those, on the one hand, who have plenty of money, have only come here to spend it, and think that the English have nothing to learn from any nation under the sun; or, on the other hand, for those who have come to Russia to make money, and have opened up some profitable lines of digging. But with us the case is so different in every respect, that we must ur-

gently request you to assist us to a hotel of precisely the opposite character to that just described: let it be an economical abode, and Russian to an intensity, even though we be put to our wits' end to explain that we are hungry and want food; but provided always that we shall be perfectly free to come and go without let or hindrance from any rules of the house, unless we like, and as long only as we may continue to like them."

So our trusty friend, premising that we must not expect to get anything in St. Petersburg very economical, or precisely free from having some dash either of the Germanic or Gallic about it, wrote us down the name of a hotel in the *Малая Морская*, that is to say, when expressed in Western letters, *Malaya Morskaya*, or a small street running from the great St. Isaac Place on the west, to that Regent Street and Oxford Street combined of St. Petersburg, the Nevski Prospekt, on the east, and therefore delightfully central. So thereto we drove on an August afternoon, with all our luggage, unable to miss the house, when its name, *Гостиница*, was painted up, not only in Russian but happily in German as well. Towards the street was a large façade of plastered wall, pierced with rows of well-formed windows; while below and on one side was a carriage gateway, cut apparently through the house, and leading by an uneven granite-boulder

pavement, assisted by two stout wooden rails for carriage-wheels, to an inner court.

Here we were received by a tall Russian man in a long green great-coat, the "Suisse" of the establishment, as he was expressly stated to be by an inscription on the door of the little side-room that formed his abiding-place when off guard; "Suisse," though he could not speak a word of anything but Russ. A waiter, however, with some French, was discovered before long,—a *garçon* of sixty-five years of age,—and the hotel-proprietor condescended to come with German; so arrangements were soon made, and we were presently ushered through the courtyard,—a deeply-enclosed place, with lodging-rooms all round, and a block of lodgings in the middle; led on we were over the paved and puddly surface of one part, and skirting other puddles by treading along the planked side-path in another part of the court, scaring flocks of beautiful doves, and at last into an open doorless doorway, up two flights of broad staircase constructed of the soft greasy limestone from the South; then through long passages, angular, dark, and smelling atrociously of tom-cats; and finally, doubly unlocking a door with lever brass handles, and then another, we debouched into a little suite of rooms, the whole of which was to be ours, by the day, the week, or the month, without any compulsory attendance on the restaurant in the front part

of the house, or any other hindrance to perfect freedom of motion than that when we did go out in the morning we were to leave the key of our entrance-door with the particular servant told off for the service of these apartments.

Hereupon the said servant, the acting chambermaid, came up, smiling and abounding in pleasant gestures of willingness to work; a broad-shouldered muscular young moujik he was, with red hair and beard, pink shirt, indigo breeches, and big boots rising up to his knees. He wielded about all the portmanteaus and carpet-bags as if they were feathers, thought nothing of the weight of the photographic boxes, and appeared to understand all the doubts my wife expressed as to the possible condition of the bedding, for he set with extraordinary zeal to turning it all topsy-turvy, beating, dusting, and airing even the very wood-work; and then, before going away for the linen, explained, partly by speaking and partly by beating his breast, that his name was "Ekim;" that if we called at any time, "Ekim," at the end of the passage, he was sure to come, but that there was no need of putting ourselves to that trouble, for there was a remarkable piece of machinery in the room, viz. a bell-pull, of which he expounded the use, both the part we were to play in pulling it at one end and the wonderful manner in which it was to signal to him at the

other that he was wanted. This man "Ekim" was not only a moujik, or peasant of Russia, but a serf, recently come up to the metropolis to push his fortune, and the bell-wire was, to him, in place of an electric-telegraph of wonder and delight. He had not apparently yet learnt any other language than his own, but took the opportunity of repeating over to himself two or three times some of the English words that he now heard, and then hastened away to prepare for the second act of his labours.

Left alone for awhile, we looked round, and were well pleased with our quarters, consisting of an entrance and passage, a sitting-room, and a bedroom, both of them well-lighted, airy, and tall. The furniture of the sitting-room was tasty, for besides rosewood chiffoniers and lofty mirrors, there were both silk-stuffed arm-chairs and a high-backed sofa, combining more elegance of form, in their well-carved wood-work, with substantial comfort than almost any specimens of such things we remember to have seen at home. The floor was carpetless, as usual in Russia, but clean, painted, and polished; all the tables and chairs, on castors; and each room, and the passage too, were supplied with Russian stoves,—huge built-up affairs, like young martello towers. Giving way to childish curiosity, we opened these stoves' iron furnace doors below, peeped in as far as we could to the commencement of the laby-

rinthine brick passages, meddled with the deep mysteries of the damper above, and wondered much how the whole thing acted, and what sort of heat was given out, and whether we should not try to order a special fire to be immediately put on, lest we might haply have the misfortune to leave Russia without ever having had any experience of these consolations of her winter season,—a fear we should certainly not have indulged, had we been able to look only a little way forward into a Russian autumn, and the experiences that were awaiting us there.

In due course the dining establishment of the hotel was tried, but was not much approved of. A bad and costly imitation of a Paris restaurant, with several small rooms, several small tables in each, bills of fare in French and German, white-chokered and black-coated waiters,—was not very attractive or instructive either. We might possibly go back a second time on a rainy day, but were determined not to be frequent visitors, and retreated with satisfaction to our own mouzhik-attended quarter of the establishment.

There, no one disturbed our independence, and we could gaze our fill on a calm Saturday afternoon from the open windows at the new scene, of behind-the-curtain with St. Petersburg houses. Over the polished roofs of stabling, covered with sheet-iron from the mines of great eastern nobles, the Demidovs and others of the Ural mountains—sheets so free

from joints and so perfectly waterproof as to admit of being laid at the low angles of Grecian-temple roofs—we looked into a court-yard, where long-bearded, kaftaned men rubbed down fine-legged and sleek-sided horses ; where doves fluttered about in crowds, and found themselves perfectly safe, though a tame and overgrown cat seemed now and then to have designs on them. Round about this yard above its office-roofing, rose high yellow-brick walls of enormous houses ; plastered, pilastered, and whitewashed on their other sides, but plain and factory-like on this ; and one of them, split from top to bottom, an illustration of Petersburg's marshy soil. But above the upper edge of these precipices of brick, rose the signal and strange sight of the golden dome of St. Izak,—bright and glorious even in the faint twilight ; a hill of splendour ; plainly too, no gilt-leaf affair, but solid, actual, noble metal.

Oh ! who is that knocking at the door ? It is the secretary of the hotel, requesting our passports, that he may put them *en règle*.

“ Thanks, Mr. Secretary, but there is no need ; our passports have been already given up to M. Otto Struve at the Imperial Observatory, and he has furnished us instead with a ‘ ticket of leave ’ from Pulkova, which will serve for the whole period of our stay in this country.” The official looks at the paper, takes a note or two, and his departure, deeply im-

pressed with the importance of visitors armed with so comprehensive and honourable a permit.

Russian money, though difficult in theory, from the many varieties of coins of which there are traditions, is in practice, we soon find, very easily learned. One ruble equals three shillings, and is divided into one hundred *kopeeks*, each therefore something between a halfpenny and a farthing. The *kopeeks* are in copper, the rubles in paper notes generally, a little silver being occasionally found. *Kopeeks* and *rubles* are of course never mistaken; and the various multiples of either, of which there are many, are always clearly notified by numbers, assisted in case of the notes by colours.

But the legends, how inscrutable! We procure an English and Russian dictionary, but that does not help us; for though opposite each English word is its equivalent in Russian, there is no reading it. So we visit an establishment called the English Library, where most new London books are to be had at, in most cases, almost three times their publishing prices, and provide ourselves with some of Chevalier Reiff's useful books, both his Manual and Grammar of the Russian language, and above all his parallel dictionary; where, between English, Russian, French, and German, you can always pick out a shaft that will carry your meaning home to one or other of the various nationalities you have to do with in this me-

tropolis of the North ; *i. e.* if you have learned your letters,—your Russian letters, O gentle reader !

Despise not the task as an easy one ; for, though some letters be the same as ours, though some of them be the old Greek, Φ for instance, Γ , Δ , etc. etc., and therefore also known already ; and though some be special, and therefore easily picked up, as Π for *ee*, \mathbb{M} for *sh*, yet when you find a \mathbb{P} turned topsy-turvy means *e*, and an \mathbb{R} backwards is all right and means *yeh*, you are sometimes a little puzzled ;* and when further still, you find that an excellently-formed \mathbb{H} means *N*, a perfect \mathbb{B} means *v*, and \mathbb{V} means *E*, and a good little *italic* \mathbb{n} means *p*, and that there are thirty-six letters in all, many of them expressing sounds barely, if at all, to be separated from each other, except by a Russian ear,—unless you have a remarkable memory, you will not very soon become conversant with the appearance of words in all their various disguises, of what is to them *Roman* alphabet, large and small ; *italic*, large and small ; and

* Says Dr. Lyall, p. 6, “ And there are other letters, in attempting the names or pronunciation of which the best grammarians place the character to be explained opposite to itself, or perhaps add to it some useless vowel, leaving the uninformed wholly in the dark till these sounds or names of these letters are acquired by the assistance of a teacher.” “ A tyro will not be much wiser when he finds $\mathbb{M}\alpha$ opposite \mathbb{M} ; or $\mathbb{M}\alpha$ opposite \mathbb{M} ; \mathfrak{A} opposite \mathfrak{A} ; $\mathbb{I}\mathfrak{O}$ opposite $\mathbb{I}\mathfrak{O}$; \mathfrak{A} opposite \mathfrak{A} ; or when he sees \mathfrak{i} and \mathfrak{v} without any explanation at all ; *i. e.* without a name ;” or, “ seven consonants in succession, used by a French author to represent a single Russian letter.”

manuscript, large and small ; in which last there are voluntary variations amounting to complete diversity in forming the same letter.

In your vexation, you may prefer perhaps to try to pick up something of the sweet Italian-sounding language by the ear. Learn as much in that way as you can, but at least get up the so-called “Roman” letters of sign-boards and street-crossings, and it will be a proud day for you when, without stopping to think, you intuitively see that that omnibus marked Невскій Проспектъ, is bound to the crowded drive of the Nevski Prospekt ; or that the legend on the wall, Англійская Набережная, merely means *Angleeshkaya Nabairazhnaya*, or the English Quay—the favourite evening promenade of the late Emperor, and all the fashionable world who loved to bask in his smiles.

Thus conning over a lesson in letters did our first Saturday evening in St. Petersburg happily terminate ; and having previously duplexed all the dates in our note-book, as August $\frac{13}{1}$ instead of simply August 13, to keep in mind that the Russian reckoning is twelve days behind ours, we were ready to encounter any adventures that might befall.

CHAPTER XIII.

A RUSSIAN SUNDAY.

MANY were the bells of St. Petersburg, ringing all the livelong Sunday morning ; rich-toned and solemn all of them, but most attention did we pay to those of St. Izak, so close to us and almost above our heads. From time to time his larger bells rolled out great waves of thundering sound that quivered and shook over all the houses ; and then there followed multitudinous smaller undulations accumulating and breaking, and mingling and separating again from bells, or *kolokols*, of every degree of size, and their belfries, or *kolokolniks*, as the Russians somewhat phonetically term them. No series of pre-arranged connected musical notes seemed to be attempted ; what melody there was, and what strains there might appear to be, were only those of the nature-sounding æolian harp, but given with all the volume and force

of great brazen hemispheres in numerous combinations and set in perfect harmony. Again and again came the deep, low-voiced organ notes of thunder from the Tsar kolokol, and again and again the rich confusion of all those other ponderous yet minor bells of bronze ; vibrating forth in one common cause, that sanctified while it united all their efforts.

Before these national chimes were quite exhausted, we had arrived in front of the church ; but though there were still many persons entering its precincts ; though carriages and droshkies in number were waiting outside ; though the magnificent granite steps (towards the middle of the porticos supplemented with smaller steps, and covered over their glassy surface with thick matting,) were still lined with hermit-like beggars in long beards, flowing garments, and big boots, and holding out, for charitable additions, little trays of cloth with a cross worked thereon and several *kopeeks* already received ; though the doorways were still beset with other and some ancient nun-like beggars, with similar cross-embazoned trays, (clothed in black dresses, and with black velvet caps on their heads like Norman helmets in shape, were these nuns,)—yet the great tide of worshippers was evidently coming out, and we were too late for witnessing the forms of their religious service.

We looked, therefore, at what was about us, and

there was much that was extremely touching, especially in the inquiries that were perceptibly made by many a fine lady as she passed some time-worn nun, or other poor old female with her little begging tray, and added thus, by kindly sympathy and timely consolation, seven times to what she gave. Something of this sort must have been the effect ; for the countenances of the sickly old creatures beamed up with a joyful confidence, as if expressing that they now knew that the populous city was not to them, any longer, the heart-desert it once had been ; and that such being the case, the merest pittance to keep them alive was enough to make them happy also. Many a long tale of illness, or thanks for relief received, seemed to be poured out, and to willing ears, in these majestic vistas formed by the several ranks of awful granite columns we were standing under ; monoliths all of them, seven feet in diameter and fifty high.

When the outgoing stream had nearly subsided, we ventured to enter the church by a small side-door which was alone open ; and as we advanced over the polished pavement, where, after the morning's flood of human beings, liveried servants were sweeping up long ridges of sand and dust, like abundant gatherings from a turnpike road,—we found ourselves in a dimly-lighted and vast space ; vaster indeed, than we could well have expected, for the inside of the church is nearly free from every im-

pediment, and measures almost the full size of what it is outside; being there rather more than three hundred feet in diameter, and in shape like a short-armed, and what is called in England, a Greek cross. Little daylight enters, except towards the summit of the great central dome, eighty-seven feet in diameter; and in that, the illumination comes in chiefly behind a large emblem of a winged dove, which appears just about to descend on the congregation from a height of three hundred and seventeen feet above the ground.

By the chastened light thus thrown down from on high, we saw the pillars and internal walls on every side adorned with large fresco paintings of the better French Academy school, interspersed with gilding and variegated marbles, which increase in splendour as the eye travels towards the eastern side, where at last it is bewildered in the unsurpassed richness of nothing but malachite and lapis-lazuli, gold and sacred historical portraits. Here too, as it appeared to us at the time, a portion of the service of the church was still proceeding; so we slowly approached. It was but a small extraneous part, for there were only two priests engaged at it, and they were standing outside the railed-off altar and *ikonostas* enclosure on the general floor-level of the whole church; and that is perfectly free from pew, chair, or bench of any description. A little crowd was collected

about the priests, chiefly of men and of the lower orders.

One priest was reading, with his back to the people and with astonishingly quick utterance, out of a huge old volume on a portable reading desk; and the other was offering a golden crucifix to be kissed, as each worshipper left the church. Near them, on a sort of easel, was a picture of the Virgin and Child; showing, as usual, only brown faces and hands, and being elsewhere covered up with plated garments adorned with jewels; but before it was a candlestand, having one large central, inverted-cone-shaped candle, with a silver circular plate about it, set with numerous sockets for small candles, of which many were already burning there. The people were bowing and crossing themselves to the rapid reading that was varied by a musical intonation occasionally of one or two words, then kissing the crucifix, kissing the frame or plated garments of the Virgin's picture, and going in peace.

In this, as we saw it dimly at a distance, there was something rather striking; but the priests themselves, as we drew near, became the more noticeable; indeed, we could hardly believe our eyes at first. Are they real living men? and if so, where can they have come from, or where are they kept on ordinary days? Surely, thus must St. Chrysostom have appeared, and the giant Fathers of the church of Con-

stantinople ! The men before us were above six feet high, with long beards covering half their faces, and with longer heads of hair that fell halfway down their backs, curled and wavy to the uttermost degree. Their dress was also a strange mixture of the primitive and the luxuriously adorned ; for in material it was yellow silk and red gold, while in shape it was a mere thick blanket wrapped around their persons from head to foot, but forming majestic folds that testified by their breadth to the amount and mass of the precious metal that stiffened them.

This sight, nevertheless, soon yielded its hold on our attention when we turned to the private devotion that seemed going on in sundry corners of the church, before special pictures. It was really something fearful to see the bowing down, the prostrations, the knocking of the forehead against the earth, then the crossing, then the prostrations again ; then the kissing of the picture, and once more a series of the most abject prostrations. It was, however, too strange and novel a sight, with too grave and deep an import, to be hastily or lightly judged ; and after witnessing it awhile longer with earnest feeling, we turned to leave the now nearly empty area.

Gorgeous as money can make a building, and complete at all points, as far as the unlimited payments and personal inspection of an Emperor can command, is this St. Isak's church. Precious mate-

rials are everywhere employed ; everything is solid, massive, and rigorously finished ; the several bronze doors are wonders of art for their alto-rilievos, both inside and out. Excepting only the peculiar religious pictures, which are ancient, Byzantine, and on portable stands, all the others, that is all those attached to the body of the church, frescos or oil, were every one of them painted expressly for their architectural positions ; and there is not a single weak one, or a single small one. The malachite columns, green to an intensity and richly marbled, in front of the *ikonostas* or more sacred altar portion of the church, exhibit shafts near fifty feet high, with bases and Corinthian capitals of massy giltwork ; while at the very entrance into the holiest of holies, the door-posts of the golden gates,—now closed and further shut in behind by a curtain of crimson silk, more richly blushing by reason of a light that is streaming through it from behind,—are formed of pillars of the rich blue which lapis-lazuli alone can show, and must be something above twenty feet in height. Everything looks new, very new, too new ; and so it may, seeing that the interior was only opened to the public last year (1858) : but though so new, nothing has been slurred, nothing forgotten, over the whole extent.

Then making our exit through the ranks of monolith pillars, with dark bronze bases and capitals of the

same, and down those illustrious steps of far-reaching, glossy red granite, we wander around. Round and about the whole vast structure extend the same glossy steps, of material hard as adamant, and never worked on so large a scale since the Pharaohs held their state upon earth ; and to every side is a similar portico, and with similar monoliths. Every pediment is filled with congeries of graduated figures in bronze ; and each corner, each apex, each niche, has always its group or single figure, colossal in size. Above all this main portion of the building rise, at the four principal corners, open-work cupolas, capped with polished gold, and containing all the rich-sounding bells ; and in the centre rises the cylindrical base of the great dome, ringed by more monolith columns of polished red granite, each of them surmounted with winged angels in bronze ; and then above all these is the great dome, a ribbed mountain of gold, bearing a little golden chapel on its summit, with the final cross standing on a crescent culminating the whole.

To appreciate these higher splendours, it was necessary to depart to a distance from the base of the building, and this is possible to an extraordinary extent, so vast is the open space that spreads all around, and forms a plain, a wilderness paved with little granite boulders ; and where one meets, here and there, with a droshky track connecting the streets on

one side with those on the other, like the footsteps of a caravan in the desert. A view more or less from the south, was that we most preferred, on account of the remarkable effects of sunlight on the golden domes ; for the very part of a western cathedral building, which with all other nations is dark, dingy, and blank, was here pre-eminently the richest. “ Glitters like the sun over a mountain,” is an expression we have seen applied to St. Izak ; but it is strangely inapplicable, you will find, with the reality before you. Each lesser cupola, with its perfectly smooth golden cap, reflects its imitation of the solar orb, and the large dome has something similar from its general surface ; but what gives out its peculiar characteristic, and constitutes the crowning glory of the whole, is the veritable “ crown of glory ” formed by the several optical images which are reflected from the gold-covered ribs of the dome. Each of these ribs reflects its little sun, and the suns of several ribs arrange themselves always to the eye of a spectator below, as an elliptical crown of just so many jewelled points of light laid obliquely, and as it were a testimony, on the general golden dome. The crown is thus simple, spiritual, but veritably glorious—truly a crown of glory ; and as we looked at it, now under one degree of perspective and consequent ellipticity, and now under another, we could speak of it under no other name, and never could see

it without being set thinking of the scriptural crown of thorns to which man's redemption is owing.

To the mere ecclesiastical architect, a happy completion is now presented of the long attempts of Russia to erect a cathedral on this spot. Why here, do you ask? why to St. Izak? and who was this saint, of the Lazarus-sounding name to western ears? He was that especial saint in the Russian calendar, on whose natal day was fought, July 8, 1709, the battle of Poltava; that battle where "the wounded Charles was taught to fly," and which for ever decided the preponderance of the Tsar over that olden enemy, Sweden, who equally with Poles and Germans, had been the uncharitable represser during seven hundred years of Russia's every attempt to expand, grow commercial, and become a companion of civilized nations. Peter the Great, on the evening of the day of victory, intuitively seeing that a grand turning-point in the history of his country had been gained, vowed that that day's saint should become the patron saint of Russia, and receive the most magnificent church in the whole empire. And as it was expressly Poltava and the retreat (or rather destruction) of the Swedes that allowed the Russians to come down on the seaboard, and exchange their central, inland capital of Moskva, for the maritime situation of St. Petersburg, why—no other place than St. Petersburg itself could be a fitting and fully ex-

pressive locality for a church that was to commemorate this advance of the nation's destinies.

Yet, in a material point of view, what a site ! On the banks of the Northern Neva, in a region of unfathomable morass, where not the smallest building can be erected, except on a substratum of piles upon piles, and where nor gardens nor fields existed ! Russian purpose is, however, one of the most determined things in the world ; and Peter's expressed opinion being the felt opinion of the whole nation, there was no fear of its being forgotten or neglected when he died. A space was accordingly marked out with religious care in the midst of the rising city from the very first, though the builders wisely refrained for a while from trying their 'prentice hands on the final structure. Hence several reigns passed away in little more than gathering engineering experience, and others were trifled with by the divers tastes of different sovereigns ; so that for the late Emperor Nicholas it was reserved to clear away all the successive trials that had been made in various materials, and then, on one boldly comprehensive plan, commence this noble fabric, which under the filial auspices of the present Emperor, has been now so well completed in every part.

St. Izak is therefore at present the cathedral, if not of all Russia (for "holy Moskva," with her ancient traditions, is stubborn), at least of St. Peters-

burg ; and both Government and fashion have abandoned the church that has hitherto served as such, viz. that dedicated to Our Lady of Kazan.

Our Lady of Kazan ! How strange the name ; let us pay a visit to her shrine. So we crossed over by the Большая Морская into the Nevski Prospekt, along crowded pavements, with no little trouble at the crossings from the almost interminable lines of carriages and droshkies, and after about half a mile found the church of our desires in a large recess on the right-hand side of the street. Curiously and strikingly scorpion-shaped it appeared in plan, by reason of two unmeaning, semicircular arcades of columns, grossly imitated from St. Peter's at Rome. Bah ! we said presently ; the whole thing, dome, portico, and all, is merely a paltry, lilliputian imitation of St. Peter's : it is not a Russian work at all, and, in fact, was erected by a French architect. We had almost refused to enter, but the statues of heroes of Borodino outside bade us expect something more national within, so we did enter.

But here were no officiating priests, no crowds of devotees ; in their place, in the centre of the church, seated on chairs arranged in a circle, were a number of soldiers, with their coats off, cleaning and re-charging white-lacquered tin candle-tubes, armed with internal spiral springs. There was to be a church fête next day in honour of an Imperial birthday, and

the Sunday afternoon was being devoted to getting the candles ready. The place was like a "Price & Co.'s Manufactory Limited," and the work was well performed too. There seems to be no external exhibition of the candle in the ornamental socket, and what appears like it during an illumination is only the white tin tube; and this the soldiers took special care to clean out, and see that the spring worked freely before introducing the candle. In this manner they seem to be able completely to prevent all that guttering of candles and incessant dropping of wax from the many-branched pendent chandeliers swinging overhead, which used to be so large a feature in church processions of the olden time.

Of sacred Byzantine pictures this church possesses many, Our Lady of Kazan being one of them, and representing a Madonna and Child, brown-faced and handed even to blackness; everywhere else plated with noble metal, and adorned with costly jewels, some of them large, though badly set. But the distinguishing feature of the whole interior is the immense amount of silver adornment about the *ikostas*; railings, doors, beams, and gates, are all of silver, the spoil-offering of Platov and his Kosaks, after their return from the Napoleon wars.

A trickling of visitors was going on all the time we were in the church; some of these pilgrims of-

ferred up a prayer before Our Lady of Kazan, crossed themselves, prostrated to the ground, kissed both the hem of the golden garments, and sometimes more or less of a whole row of similar but smaller plated pictures in an opposite aisle, and then departed with penitential reverence ; some again looked on at the candle-works ; others went gazing round at the rows of military trophies, flags of the French, Turks, Poles, and Persians, with a few Prussian standards taken in battle ; at the keys of various conquered cities, and at Marshal Davoust's bâton ; and finally, some religious parent occasionally brought a little child, to teach the poor innocent mite to cross itself, and bow down before this, that, or the other painted effigy, and then, on being lifted up, to kiss it dearly.

On the whole, the Kazan church (cathedral no longer) left on our minds rather a melancholy impression. Adorned by Kosak spoils far from their Ukraine plains, and with supremacy passed away, this building makes one think of the Malo-Russians at Poltava, and Peter's cruel revenge upon them after his victory. A brave foreign enemy he could treat with generosity, but a domestic foe, and anything approaching to want of loyalty, was not in his nature, or, perhaps, in that of any true Russian of the post-Tahtar period, to overlook or forgive ; and he spared them not. Never, certainly, from that

day, have the Ukraine horsemen ventured to lift up their heads as an independent people ; they must fight now and die, solely to increase the majesty of the domain of Great-Russia ; and the present position of the two races is not inaptly represented by their two churches. In the Kazan, there is no doubt plenty of hard-earned military glory, but combined with signs of oppression and toil ; while in St. Izak, you see everywhere proofs of imperial power, majestic wealth, and in fact of a dominant nationality.

In the evening, hearing the bells of the latter building once again, we hastened there, and found the service in full performance. The crowd of people was dense, standing, of all ranks, and mostly men. There were many priests employed, all the same gigantic, long-haired, and long-bearded men, with mighty blankets of embroidered gold about them. Quick reading was going on ; but chiefly did we notice the golden doors of the ikonostas thrown open ; the holiest of holies exposed to view, with an inner altar, and seven-branched candlesticks, and incense burning ; and with, above all, a colossal glass-stained picture of the Redeemer.

Yet, notwithstanding all the pomp of circumstances, it was noticeable that there were no musical instruments ; there, the Russians entirely coincide with the Scottish Presbyterians in their purest days, with the men of the Solemn League and Co-

venant, rather than those of the Tricentenary of the Reformation; for the Eastern Church undeviatingly holds that nothing but the human voice is apostolically enjoined to be employed in praising the Lord. "O Cæsar," said the Patriarch of Ephesus, to John Palæologus, in 1462, "what, that is good, have you beheld in the Latin church? Is it, perhaps, the beauty of the churches, whose roofs re-echo with the sound of organs, of trumpets, and all sorts of instruments; where they applaud with the hands and the feet, and where they give spectacles which rejoice the d—l?"* With most Protestants, too, do Russians agree in undervaluing traditions and church authorities compared with the book of revelation. The book, the book, they cry aloud; that is the sole arbiter of what men must do to be saved; and therewith, a mighty priest, a veritable son of Anak, lifts up a huge copy of that sacred book, and poising it above his head with both arms he bears it triumphantly out amongst the throng of the people; the other priests follow him rejoicingly, and in the very centre of the Church the book is opened, and read amongst all present. Then follow other ceremonies; and at last the whole train of priests retire once again into the holy place; its golden doors are closed, the crimson curtain is drawn, and the people are left alone.

* Levesque, vol. ii. p. 301.

But the seed now sown, begins anon to wax mightily in the hearts of the faithful. With supplications and prayers, in most moving song, their choir besiege the portals of the golden gates. Again, and again, they approach with the most wailing and soul-thrilling strains; while the whole congregation crosses and prostrates itself more earnestly than ever. And how are internal characters sometimes pointedly exhibited! Here, is an honest old aunty of a woman, who crosses herself diligently, times without number, in a quick knocking sort of way to head, breast, and either shoulder; she loses no time about it, and is perfectly in earnest; and then, not content simply to bow, she unceremoniously pushes and clears a little open space before and behind, in the which she pops down on knees and hands, and insists on giving the floor a decided rap with her forehead; and then up again like lightning, and at the crossing as thoroughly as before. Next, we note an old man supported by a little boy; how grandly the ancient peasant rises superior to all his bodily infirmities, as with solemn fervour and fulness, he makes each portion of the sign of the cross; and then kneels down, and bends him, yea, more still, until he goes through the whole form of prostration, down even to the very ground, and omits not a single detail. Then there is a fine young lady, of the over-delicate and fanciful kind. How she is overcome

by her sensitive feelings ! She feels so much more deeply, she thinks, than any one else present : so much so, that in crossing herself she can only just bring her thumb and two fingers to something like a small approximation towards each other, instead of firmly uniting them into the Greek emblem of the Trinity ; and then faintly and slowly, when thumb and fingers are about at a medium level, she makes a show of lifting them a barely visible quantity upwards towards her forehead, and then depresses them a little ; and then, oh dear the exertion ! slightly points them to her right shoulder ; and then, alas for her exhaustion ! to her left shoulder, in order to complete the sign ; so then what can she do, but sigh and droop her head, and close her pallid eyes, until she has recovered sufficiently for another performance of the too muscular labour for so ethereal a being ; yet is she decidedly fat, and endued with a temper as well.

Much too, do the people accomplish about this period of the service, with their votive candles. From the further parts of the church they press up with their white wax candles in their hands ; and when they can penetrate the crowd no further, you receive a tap on the shoulder, and are requested to hand the candle on over the heads of those before you, to be lit and erected on the silver plate round the great conical light that burns before the sacred picture. Then you feel a gentle but determined

pressing on one side, and a young officer advances, with his bride in one hand and a candle in the other, and he is anxious to present them both before the painting. Then comes a great jostling, and a stout, fat old gentleman in a big cloak, and a candle over his shoulder as long as a walking stick, comes pressing lustily forward; but, alas for him, the crowd is not to be divided above a certain point, and he is obliged at last to hand his candle over, for others to light and erect for him. And what a fate may attend it then! Some of the tapers burn a long time and gutter; but another is scarcely lit and has begun to typify the spiritual nature of the soul of the offerer, when a uniformed church-servant pulls it up, blows it out, dabs down its smoking wick on the silver plate, and then chucks it into a big box, of similar unused-up candles, lying on the ground.

All this time the vocal choir, chiefly of young boys, are weeping and beseeching before the golden gates, the "royal doors," in musical tones so penetratingly uttered, that at last a big priest comes out from behind the screen by a little side-door and assists them with his grand bass voice. Then another priest comes on the other side, and they all assail the obdurate gates with such a flood of song, that at last even the very door-posts must relent. And they do, for first the crimson curtain is drawn, then the palisading slowly opens; whereupon the holy place

appears with the seven candlesticks of the seven churches ; the sacred book is brought out again to the congregation, incense burns, the priests form in line, and the wailing song is changed into a shout of joy. After awhile, the high-priest retires, the deacons disappear, the golden gates turn once more upon their hinges, but the book is left behind amongst the people ; and the while that one priest reads forth its memorable words clearly and distinctly, another offers the golden crucifix to high and low, to man, woman, and child, for a parting osculation.

When we withdrew from this scene, the evening was far advanced ; but the northern twilight was still rich and powerful, and spreading a magnificent golden light over the northern horizon, in front of which Peter the Great, on his horse of bronze, was prancing majestically from his granite pedestal. Instead of walking in that direction, we preferred to enter the boulevard on the left, and there quietly discuss the scenes we had been witnessing ; not only the gorgeous spectacle of the mighty crowd, but those more solemn and moving, special and particular single instances, where some aged countrywoman, or perhaps a hard-working peasant man, had in a retired corner thrown themselves down on their knees or their faces, and wrestled long and earnestly, almost fearfully, in prayer, as only good and earnest Christians can.

“Ay ! but then it was before a picture ; and if they

did read that book they made so much of, they would find no authority for such a shrine."

'True alas ! yet it is not for us to form a final opinion of our fellow-beings : who knows all their inward hearts ? And if the prayer, independent of the place, was addressed to God through the mediation of his Son, who shall dare to say that no measure of the Holy Spirit would be granted to such earnest and humble supplications ?'

The passengers occasionally walking past, and sometimes taking part of the same bench-seat, gradually led us into other trains of thought, and obliged us to speak of what was before us. There were magnificent mansions in the broad, planted street, apparently of nobles ; and at one of them, nearly behind us, a whole crowd of country workmen were encamped to carry on the repairs, and were making themselves merry on their one leisure evening.

About the same time a rider, on a magnificent horse, passed once or twice under a house in front of us ; a splendid animal the horse was, with its mane and tail of ample proportions, its eye brilliant, step elastic and springy, and its whole frame showing fine nervous and muscular organization. Too good a horse for the rider ; the valet surely he must be, on his master's steed ; and so we concluded for certain, when we saw a window open in the said house, on the second story, all the other lower win-

dows being completely closed up, and an unmistakable lady's-maid began a most interesting conversation with the mounted man. She leaned out of the window, both elbows protruded, and screamed down tender sentiments to him; and he, throwing himself back in the saddle, and supporting himself by putting one hand behind him on the quarters of the horse, laid the other hand to the side of his mouth, and bawled up responses as loving.

“The secret of Anchuelos,” re-enacted under a Northern sky.

CHAPTER XIV.

WEEK-DAY RAMBLES.

HAVING long since settled in our minds that we were not to try to see *all* the various sights, just as they are set down in a tourist's printed instructions, and in that way see nothing thoroughly ; but were, on the contrary, to follow out certain ideas of our own, of more restricted, but on the whole more searching character,—we resisted steadily all advice to employ either a *valet de place* or a droshky ; and when Monday morning arrived, sallied forth into the broad streets of St. Petersburg, only too delighted to tramp along on foot over their pebbly granite roadways.

Here and there, indeed, in the more fashionable quarters, the round stones are replaced by strips and lengths of wooden tessellated surface ; and then, take care that you are not noiselessly run over,—spite of very stringent police regulations to the contrary,—

so quietly and so silently does many a private carriage, with silver springs and high-bred horses gay in silver-studded harness, come gliding over the soft elastic surface. Stand, therefore, O stranger, on the foot pavement, and that is generally broad and good, when you are trying to make out the names of the streets; especially as they may prove much tougher knots to disentangle than you expect. The Austrian traveller Kohl, writing some twenty years ago, says that every street has two written names, a Russian and a German one; but, whether it is that Russia has grown more national, or that she is better educated since then, we do not know; the fact presented to us in 1859 was, that the names of the streets were inscribed in Russian letters alone.

Much easier, therefore, did we find the shop-signs, where French as well as German abundantly appears; but we looked long for any English name or word. We had even begun to fear, after several days of search, that we must be content with *A. de Verrier, Dentiste Anglais*, as an English inscription; (by the way, how many dentists there are in St. Petersburg!—and when we saw the Duke of Friedland's awful name, "*Wallenstein, Dentiste*," in letters each as large as a window, we began to think that if, according to the Arab's tradition, the King of the Fleas lives in Galilee, the Field-Marshal of Dentistry must take up his abode in this Northern capital;) when at last we

were rewarded with a sight of our own language, but so transmogrified ! A polyglot barber had inscribed each shutter of his many-windowed establishment with a legend in a different language ; and British type is all devoid of power to show what quaint forms certain letters figured under, in the enticing statement that there was a saloon for “schAVing, cut And friZing thE HAiꝛS.”

It was a happy thought, surely, of Russian shop-keepers, to supplement in all cases their astounding calligraphy by pictorial representation ; and to the extent, not only of exhibiting outside the effigies of all sorts of tangible substances kept in store within, but to typify the operations performed as well ; giving you thus a good idea beforehand of what you would have to go through, and the etiquette of each of the rival establishments. At Pulkova village even, there were daubs of this sort ; but in St. Petersburg, at the call of wealth, no inconsiderable genius of objective painting had been elicited ; and we actually stopped several times before sundry bakers' shops to admire the artistic touches of thick body-colour, or the rich glazes happily “tickled in”—we believe that is the phrase in vogue amongst Academicians—tickled into and amongst the drier paintings, so as to represent, under an effective direct light, all those thousand and one little accidents which the crusty part of rolls is heir to, near its corners or

edges, and at the places where the plastic dough was doubled over or broken off previous to the baking ; while the national fondness for rye bread, deep vandyke-brown in tint, always furnishes the painter with most desirable types of rich, warm shadow-colour, wherewith to throw out into striking relief his whiter wheaten breads ; and at the same time to show off his own power of painting glossy surfaces, or his full understanding of mysterious reflected light.

If we admired these paintings so very much at that particular instant, perhaps the truth should be told, that our admiration was a little heightened by a gentle feeling of hunger, which bade us begin to think of where we were going to breakfast. Somewhere, we said, in the direct line of our peregrinations, for we cannot afford to turn out of our way for such a trifle ; so now, eyes open, and don't let any likely place pass by unnoticed.

In a few minutes we came to a long row of windows of an establishment on the ground-floor ; whereat, in a large sort of coffee-room, *isvostchiks* or *droshky*-drivers were seated at innumerable little tables, drinking tea out of china cups shining with scarlet and gold. It was a strange sight to see all their rough, honest, long-bearded faces in connection with these small decorated teacups ; and all over the room nothing but tea was being indulged in—evidently, too, of the men's own accord and notion, and

without any patriotic ladies to set them to it, and see that they took their draughts as ordered. We then, beholding all this, were at once induced to try a "Restaurant Français" that was almost immediately above the exemplary tea-room of the long-coated men.

The place proved, though, to be rather a mistake, for no one in the said "restaurant" could speak a word of French; and what they gave us to eat was not very Russian in quality, or moderate in price.

A bright sun and a cheerful westerly breeze soon sent into oblivion the memory of an indifferent meal, and we continued our walk along one of the southern quays, with palatial buildings on one hand, and on the other the granite river-walls, beyond which were lines of those bulky, primitive lighters, *struses*, built of cleft birch-tree stems; some of them bringing building materials, and others—by far the greater part—laden with firewood, young tree-trunks cut into lengths convenient for Russian stoves.

Soon we came upon the Nikolayevski Bridge, and though from the western side there was a rich and busy scene of shipping, steamers, and commerce, yet we rather dwelt on the view to the east, whence comes that never-ceasing flow of pellucid water which forms the majestic stream of the Neva; and towards which quarter are directed long abutments from the several piers, like so many gigantic knives of granite, edge upwards, for breaking in pieces the

floating fields of ice that at certain seasons come whirling out of Ladoga lake, and sweep out the whole breadth of the river before them.

In length about twelve hundred feet, with seven arches of elegantly flattened ellipsoidal form, and a ship drawbridge portion at the northern end, where the roadway, single and imperially broad before, separates into two diverging branches,—this bridge is a beautiful construction to look upon from far and near ; so lightly and airily does it span the waters, and yet show such a grip of the earth below, with wide-reaching solid masses of ponderous stone. And it is the only stone, the only permanent bridge, over any part of the Neva—a glorious triumph, therefore, for the late Emperor to have achieved.

In almost all the other institutions of the city, and certainly all the more important ones, the portrait of Peter the Great is to be seen as the commencer, and that of the Empress Catherine II. as the finisher, of the useful work. Separated by eighty years, and by six reigns, in their lives, they are thus honourably connected after death in the grateful remembrance of their subjects. To neither, however, of those exalted sovereigns was it given to supply their people with the benefits of a permanent bridge, and probably not even to contemplate the possibility of its ever being done ; for while the moving ice-floes both in autumn and spring defied all the usual human con-

trivances of restraint, even had the situation otherwise been unexceptionable, there was found no firm foundation in the Neva's bed for even an ordinary unresisted bridge. Half soft wet clay and half quicksand, seems to be everywhere, and to unlimited depths, the soil through or over which the river flows, and on which the city was built ; built, too, just at the mouth of this giant stream, where it breaks into numerous channels as it flows amongst the oozy islands of a delta that has barely emerged to the light of day.

Some persons therefore say that St. Petersburg stands on a hundred islands ; and there are no doubt a great many, though on the map we can only recognize eight or nine very large ones with important quotas of population established upon them ; and amongst some of these even, the separating channels are so narrow as not to admit the passage of much ice, and therefore, in so far, they offer no more particular engineering difficulty than many canals. But on certain of the islands there are no doubt hundreds and thousands of persons separated by the broader arms of the river—near the Winter Palace more than two thousand feet broad—and whose power of communication with their relatives living in other parts of the city depends altogether on temporary bridges of boats.

Through the middle of winter, fixed on the solid ice, and through the middle of summer floating on

the water and moored by many anchors, these boat-supported road-ways are, for so long, steady and convenient enough; but the moment the ice begins to break up, instantly, to prevent their being destroyed, the bridges must be taken to pieces, and carried away to places of safety. So suddenly does this change occur, that the medical man who has gone to visit a patient in the Vassili Ostrov quarter, finds on his return, in place of the firm platform he crossed by, a broad roaring river filled with hurtling sheets of crashing ice.

In one day, or in several days, the obstructive masses pass away, and then, as quickly as they had previously disjoined it, do the captain and so-called crew of the bridge bring out and reconstruct its several parts. This, however, is sometimes no sooner accomplished than down comes another vast flotation of ice from Ladoga, and, quick as lightning, all the bridges must be removed again, and towed away to certain secure nooks and down-stream-opening corners. And this scene has been known to occur more than twenty times in one spring, before the solid winter surface of the river has finally and for good put on its summer character of fluidity. Meanwhile, there has been a whole harvest of distressing accidents, or afflicting separations either of loving families or would-be punctual men of business. Here is a merchant, who must have his mes-

sage conveyed over; a brave mouzhik undertakes to carry it, leaping from fragment to fragment of floating ice; the population cheer him, and the police on the banks prepare for his capture as soon as he lands, because he has violated their edict in attempting the passage of the river under such circumstances; but those banks he never reaches alive, for a mightier arm than that of a policeman, oftener than not, has seized him; and more men are drowned every year in St. Petersburg than in any other European city. How Kohl—who has graphically described these scenes, and predicted that some day the difficulties of constructing a permanent bridge, though serious, would be overcome—must rejoice to know that his prophecy has been fulfilled; and how delighted his traveller's soul would be to witness how well the task has been now performed!

Three sets of piles, each, if we heard aright, seventy-five feet long, had to be driven in, one on the top of the other, and in such numbers as to touch side by side, all across and along that part of the bed of the river, before the engineers had a sufficiently secure under-stratum to begin their work upon; and then they commenced laying down their Cyclopean blocks of Finland granite. A valuable material, this granite, without which, indeed, modern St. Petersburg would not be possible; for, travel forth far and wide as you may in Russia proper, and

dig down deep through her generally soft alluvial soil, and you seldom come to anything better than thin, flaky limestone. This sheety stuff has been tried for the side-pavement of the noble bridge; unfortunately, for it is already exfoliating and breaking up under the mere feet of the passengers; but all the ferocious attacks of the impetuous ice-rams in winter have not yet dulled the edge of the granite knives, or perceptibly scratched the polished surface of the stately granite archways. And thus has been turned to important practical account in the service of man the constituent substance of an extensive northern region, that lay wholly undeveloped, and labelled barren, before Russia came into possession, prepared a market, and opened the way for its useful employment.

As we stood on the river's right bank, under the "Palace of the Fine Arts," and near the spacious recesses for the machinery of the "draw" portions of the bridge, the amount of surface of worked granite that was then and thereabouts presented to the eye was so enormous in extent, as to render the appearance of two large Egyptian Sphinxes, mounted as monuments on the top of the quay-wall, not only not out of place, but make them even eminently impressive of the sentiment—that the Tsars of Russia, more than all the other existing rulers of mankind, have in these hyperborean regions succeeded in

realizing to our epoch many of the departed glories and peculiar attributes of the ancient Pharaohs, those majestic kings in the earth's early history.

The Egyptian granite of these Sphinxes is pink in colour, and so is the Finland granite of the pedestals on which the mysterious animals now recline; and it were an interesting inquiry to compare the skill of the world's workmen of the present age, with those who wrought their tasks full five thousand years ago, but on the same, or nearly the same, description of rock. The comparison, however, would not in this case be altogether fair, seeing that the modern mineral is rather coarse and uneven in grain, forming almost a pudding-stone breccia of granite, while the ancient one is finer in grain, better mixed, and, we should say, much harder. It is incumbent, moreover, in justice, to remark, that the said modern pedestals are merely roughly worked to square blocks, and are in fact masons', not sculptors' handiwork; while the Sphinxes were evidently highly polished, after being carefully and masterly carved. We will nevertheless pronounce at once, without fear of contradiction, that the old Egyptians prove themselves rivals not to be lightly esteemed by any nation of the nineteenth century; for the manner in which the hieroglyphics are cut into their flinty and heterogeneous basis is really above all praise, and all our understanding, too, as to how they did

it ; the sacred figures going clean through all the varied crystals of quartz, mica, and felspar, with a precision and sharpness, united with depth and flatness of bottom-space, that actually leaves modern marble-cutting far behind, and looks more like ideal figuring in such a substance as Castile soap, rather than anything else that we can call to mind at the moment.

In Egypt there must have existed generations after generations of granite-workers to improve their art ; and worthily did that old people, situated in the hot and dry belt of country that marks the earth just outside the rainy tropics, perceive that its special mission was, "to record history for future ages ;" because, though other nations in other latitudes should equally carve their rocks with written characters, yet, neither amongst the snows of the Pole, nor the damp heats of the Equator, would such letters remain many centuries legible ; while, under the arid, blue sky of North Africa, the finest lines, in either granite or sandstone, see thousands of years pass away, as though it were but yesterday.

Russia, in a different latitude and a later age, when employing the three-crystalled rock in like abundance, has plainly another purpose in the economy of nature to subserve, and she is moreover only just beginning her task. Yet her skill and her success are already quite worthy of her ; and if one

would see how she would have cut the fine hieroglyphic inscriptions of ancient Egypt, had she been there in her place to do it, we should look to some of her recent works in the blue-grey, not the red, granite; for the former, equally a production of the North, is extremely fine in the grain, and probably as hard as the Egyptian red.

An excellent worked example of this grey Russian granite is fortunately offered to view on the Nikolayevski bridge itself: for just at the junction of the drawbridge roadways, there is erected in this material, a dedicatory chapel to St. Alexander Nevski. An exquisite example, too, it is, though lilliputian in size, of ecclesiastical architecture thoroughly adhered to in principle, at the same time that it is boldly executed in the improved manufactures of the present day. The east and west sides of the chapel are accordingly filled with magnificent arch-shaped sheets of the finest plate-glass, while a mural painting of the military saint fills the external wall on the north. Then the pillared corners and door-posts of the chapel, in polished grey granite, rise from a base of the same, and support an entablature of similar material; above which is a steep conical roof with golden tiles, surmounted by a glittering little gilded dome, and a richly ornamented cross.*

* See Plate 2, Vol. II.

The whole building, which is not much more than four times the linear dimensions of a sentry-box, is thus finished and perfect to the last degree, and shows brilliantly as well as elegantly in the sun. But amongst the mass of the people it excites some far deeper feeling ; for, as we stood for a few minutes in a neighbouring niche, observing, hardly a second elapsed without some person being in the act of bowing and crossing, with bare head, as he passed the hallowed precincts. Quick as any carriage may drive, and troublesome as may be the spirited horses, yet off goes the driver's cap, and assiduously is his right hand employed in crossing himself over and over again as he nears and passes the sacred little edifice. Russian carts and waggons (*telegas*, properly speaking, as they are national in build) have generally as fine-legged horses, capable of speed and showy in action, as the more dandified vehicles of the richer classes ; so they rattle along furiously, and the driver is almost shaken off his seat at every instant ; but for all that, his hand goes up to his hat, and he scrupulously pays all the vows that he has vowed, as he approaches the object of his regards.

Not every individual man, nevertheless, we soon see, is thus outwardly observant of religious duties ; and then it becomes an interesting occupation to note who does and who does not observe these rites ; and, on the whole, we think those who do are the

more estimable set. The observant are chiefly of the lower orders, but by no means entirely, and they are characterized rather by the preponderance among them of calm, respectful, thinking countenances.

To us strangers, the novelty of the scene has occasionally something of an effect it should not have, especially when a droshky is coming along at a smart pace, and both long-bearded driver in front and broad-cloaked old military gentleman behind, have their caps off at the same instant, and their heads bowing and their right hands working up and down and from right to left as fast as they can go. But then the scene is changed almost instantly, and assumes once more its impressive aspect, when a group of hard-toiling peasant workmen, of tall stature and stern care-marked countenances, and who up to that minute had seemed only a burly knot of human machines, fit for nothing beyond elemental labour,—approach, and in a moment they form open rank along the curbstone of the foot-pavement, with bare heads, and their attention is so perfectly absorbed in their acts of devotion, that whether the whole street is looking at them, or not a single person be near, is altogether unnoticed by them.

Much longer could we have wished to continue these studies of human nature under the influence of something higher; but there was a necessity for our moving, for was it not Monday, and were we

not bound on a visit to the Professor of Astronomy in the University of St. Petersburg at his private residence in the Vassili Ostrov, or Island of Basil? This was truly the case, and we were now in that very island; a peculiarly Peter-the-Great portion of the city too, it forms, with buildings magnificently long in range, but somewhat less truly palatial and lofty than those on the mainland on the opposite side of the stream of the "Greater Neva." Commerce, of the Amsterdam species, and learning, were ordered by the Imperial founder to be the chief tenants of this, one of the flattest and almost the lowest of all the Neva's islands; hence, towards the eastern end, the "Dutch" Bourse and the Custom-house, and from thence westward the Museums and Palace of the Academy of Sciences, the University, the enormous College of Cadets, the Fine Arts, the Polytechnic, and other institutions and schools. From these public buildings a goodly portion of ordinary city extends, in rectangularly crossing and regularly designated streets; those at right-angles to the river being termed "Lines," and numbered from east to west; while the others, which are parallel to the shore, are termed "Prospekts"—that name which, with all its simplicity and objective propriety, our authors translate so variously, from prospect to perspective.

Running down the quay, then, to the right Line,

and then passing up that to the proper Prospekt, and to six houses beyond, we found the quarters we were in search of; and a ready admittance, as well as hospitable reception. At the time of our arrival the learned man was engaged with his books; mathematical treatises, interspersed with copies of several English reviews, the Quarterly, Edinburgh, and Westminster, which he could read with facility, and even with nice appreciation of the styles of the various anonymous writers, though not trusting himself to speak a word of their language, so atrociously unphonetic is that method of spelling, which Government examinations are now doing their utmost to perpetuate in all its existing crudities and deformity. With these books, then, he was engaged, under a little summer-house, in a small patch of garden-ground filled with acacia-bushes, shiny-leaved poplars, and two young Siberian cedars planted with much care in the midst of rank weeds that abounded all over the loose sandy soil. This was the Professor's summer place of study; his winter *sanctum* was deep in the house, with a giant stove at one end of the room, and with either side-wall hung from top to bottom with portraits of mathematical and astronomical worthies of various lands; and we had already remarked in several other cases how the genial nature of a scientific Russian is seldom content with the mere written works of an author standing dryly

in his library, but desires also to possess and keep before him the counterfeit presentment of each man's features as well, so that he may see how the writer looked as he wrote, and may seek through his eyes to look into his heart and soul, as though he were his own personal acquaintance and friend.

Our new host was on this occasion living for a time a bachelor life, for his wife and daughter had not yet returned from their summer country tour, and his son had just gone back to school, (by steamer to Viborg, whence he was to return at Christmas in a sledge, over the then thick ice-rock of the same identical track that he had just now pursued in an ocean-sized ship ; thus they *have* without doubt got seasons in this country, and there *is* a difference between their summer and winter ;) but, nevertheless, the Professor could not think of letting any visitors depart from his abode without partaking of some refreshment, so with the utmost good-nature and true kindness of intention he bustled about, now talking of the latest English books, and now giving directions behind the scenes, until the table was at last pleasantly and effectually spread before us.

What proved itself, however, even more to our immediate purpose was this, that the astronomer went readily into our desire to try to take a photograph of that noted fossil Siberian mammoth, which is now in the Museum of the Academy of Sciences,

and has been so often described and discussed in one point or another by authors of various countries during the last seventy years at least. So being a man of action as well as thought, the repast was no sooner concluded than he donned his Russian cloak, led us to the Academy's Palace on the river-side, introduced us to the Secretary in his private apartments that were adorned with tropical plants like a hothouse and with his own paintings; and obtained us full leave to enter the Academy Museum, either on public or private days, for the purpose mentioned.

Monday was one of the public days, and hence unsuitable for real work; but we hastened on, at least to have a general idea of the ground, before bringing our camera and photographic apparatus on some subsequent occasion. Arrived, therefore, at the Museum, the place was found one general crowd, as densely thronged almost as the Crystal Palace on a shilling day—we mean the good old Crystal Palace of 1851, for there has been no other worth the name since then; and accordingly we moved on, as we only could, slowly and with the multitude from room to room. Thus we worked on through stores of natural history treasures, amongst stuffed animals,—prepared with so much naturalistic and artistic skill, as veritably to be fit even to serve a painter's purpose when he desires to introduce the leopards of a Bacchus car, or the forest denizens of other lands than his own,

into his picture,—amongst skeletons and portions of osseous preparations well set up, shells, insects, and minerals innumerable, until at last we arrived at a *cul-de-sac* rotunda, where, towering high above the remains of all the largest existing mammals of the earth, were the bones of that enormous scythe-tusked mammoth, from the region of nothing at present existing but reindeer moss and frozen soil, on the shores of the Arctic Ocean.

CHAPTER XV.

SECRETS.

WHEN *Ekim* came running to our rooms one morning, and with much excitement tried to pantomime that an extraordinary high man was coming, we expected wonders; but the warning resulted only in a very unpretending and kindly acquaintance just dropping in to see how we were getting on in our St. Petersburg quarters. He was a learned man to be sure, a member of the Russian Academy of Sciences, and was rigged out in the official costume of that body; but he appeared a little put out and disturbed about something that had recently occurred. What could it be? Was it that he panted for a cigar? For you must know, that no man, high or low, is permitted under any pretence, or in any shape whatsoever, to smoke tobacco in the streets of St. Petersburg.

Hence, to those who do not indulge, it is a delightful freedom to walk in any of the most crowded thoroughfares of this city, and never suffer, as in London, Paris, and the German fatherland, that disgusting insult of having to breathe and swallow the refuse smoke which a selfish and unchivalrous man just before you, after having used and contaminated for his own private satisfaction, immediately after vomits and ejects,—quite regardless whether the moment that this fetid and now poisonous vapour escapes from his lips, a head-wind shall not blow it right down into your face, eyes, nose, mouth, and ears, like it or not, as you may. The suffering majority, therefore, must applaud the late Emperor's result; though they could wish that it had been brought about by the sinners themselves spontaneously seeing the evilness and the uncharitableness of their ways; and of their own promptings, ceasing to annoy their neighbours precisely with that, which they themselves so stoutly refuse to adopt or assimilate.

The patient majority, however, the non-smokers, are in Russia moved to pity and sympathy when they see their wilful, would-be smoking brethren controlled by force of despotic law; and consequently, though inwardly desiring their conversion, yet they seek every opportunity of giving them freedom of action. So no sooner has a gentleman entered within four walls, out of the police-watched

streets of St. Petersburg, than both host and hostess vie with each other in offering their visitor every facility for setting on foot his nicotian indulgence.

Knowing, then, simply what would be to our morning guest even more pleasing than to the Arab the sound of rain in a desert land, we hastened to present both a lighted candle on the table before him and a small saucer to receive his waste cigar ashes ; nor was he backward in choosing one of his largest beauties, preparing the end in a loving manner ; and then, in an attitude of reclining delight, sending up towards the ceiling the long-desired wreaths of light-blue smoke.

The process was evidently calming, and the thoughts that had so troubled his mind were one by one discharged for our benefit in words, amongst the curling puffs, something after this fashion. " We have had such an awkward meeting," said he, " in the Academy of Sciences." Three puffs, and then he added, " of course I need not tell you how high an opinion we all have here of M. Le Verrier as an astronomer and mathematician ; but when it comes to politics, and receiving orders from him as to what we are to do, in matters where we have opinions of our own, really that is quite a different matter."

" What can all this be the prelude to?" thought we ; but we had to restrain our patience to hear, while the white excrescence that had formed at the end of

the cigar was being broken off against the inside of the saucer, so as to prevent the destiny of its otherwise falling off presently, by its own weight, on to the spotless blue dress with gilt buttons of the full Academician; or even, in the chapter of accidents, on the pretty little order glistening upon his breast.

So the cigar being brought back again to a normal condition, its smoker resumed with, "Well, now, what do you think M. Le Verrier has been writing to us about? Why, he proposes that the Russian Academy of Sciences should send Louis Napoleon a letter, congratulating him on his safe and successful return from the Italian war!"

"What have we, as a scientific society, to do with his wars, or with any wars? Perhaps, if we had really believed the French statement made in spring, to the effect that France had not armed, and that it was only Austria who had armed, we might have been rather fearful of what the results would have been to him, the unprepared Emperor, the poor, defenceless, innocent man, when the war broke out so very soon after; but we knew well enough here what all that denial of arming meant, and knew of some other preparations, too, that are still going on, and pretty actively, in all the French ports, as well as in their garrison towns. Then too, have we not heard, and really *ad nauseam*, that Imperial France is the only chivalrous-minded country in Europe; that she is the only one

who fights for a noble idea, for abstract perfection of right and justice and liberty amongst the nations? Well, if it is so, isn't virtue its own reward, and isn't virtue always content with such a reward? But just look now at this go-ahead Emperor of the grandly virtuous school; he can't be content with the knowledge of having done a good action, so he begins by insisting on getting payment for it in praise—praise, too, from all sorts of people, and all the countries round about him; and therefore it is, that he applies the screw to poor Le Verrier, and makes him, the discoverer of distant planet worlds, and the intellectual prober of infinite space, write a forced letter to us, that we should send gratulations also. Oh yes! by all means we should, to calm his Emperor's guilty conscience, for the mangling and slaughtering of thousands of men in a few short days, and glut his appetite for hollow flattery and hyperbolic praise. Ah, ah! you may be sure that this is only the beginning of the payments on which the disinterested man, who has been fighting only for the rights and justice of others, will soon insist. You see now, after he has got all the praise-payment he can force out of men for his noble acts, if he does not then come down on the simple Italians, and make them pay full measure, pressed down, and running over, for the pound of liberty they have got with much struggling for. Ay, and a pound of their

best flesh he will have too, in return ; and he will suffer no qualms, even like Shylock's, to interfere with his taking it out from next their hearts, let them bleed to death or not, just as they may, during the operation ; you only see." And with these words our friend, worked up to marvellous enthusiasm, took his cigar from between his lips with the points of his finger and thumb, and was just going to make a little prophetic flourish with it in the air, when, lamentable to say, the long ashy tip that had been accumulating during his lengthy discourse, broke short off, fell right down on the devoted blue cloth garments, and rolled down them in fragments and white dust, like the trace of an avalanche seen in remote distance.

Alas that we had invited our visitor to indulge in his self-punishing enjoyment of the cigar ! But he was determined to be a victim, and had very soon lighted another of his seductive rolls. Then too, who should join the party but M. Otto Struve ? and he opened a new topic of conversation. " Your Teneriffe expedition," said he ; " we have been reading, first your little popular book, and since then your official report, and we do really think that you have proved the advisability and practicability of astronomers in the present day carrying out Newton's old suggestion as to eliminating the disturbing and often destroying influences of the atmosphere on their ob-

servations, by taking their telescopes up to the top of a high mountain. Now, let me ask, what is your Government going to do in working out these first results to their further legitimate consequences?"

We confessed our entire inability to answer the question.

"Well," said he, "I hope you won't think that we are taking an unjust advantage of you, and getting before you in the race, if we determine to follow up the openings made by those pioneer proceedings in 1856. We have no intention, indeed, of actually following in your footsteps, or of establishing our astronomers on any ocean mountain-top. Russia's path is through the centre of continents, and she has now, in the extreme southern line of her territories, mountains quite high enough for these purposes, without going anywhere else into foreign countries."

"Now, don't look so doubtful," he presently added smilingly and in a deprecating tone, while he prudently took the opportunity of clearing the hoary point of his cigar; "don't poke us up again about our dear *golubtchik*, our little *dove* of a mountain, Pulkova; for I am alluding now to Transcaucasia, where we can go up pretty nearly three miles and a quarter vertically in the air, or equal to one mile above the top of Teneriffe, and a mile and a third above the summit of Mount Etna. Well, then; I may tell you that the Russian Government is prepa-

ring schools, colleges, and both educational and scientific establishments for her southern districts; and there seem to be many reasons for founding an astronomical Observatory in the city of Teflis, in lat. $41^{\circ}41'$, long. E. of Greenwich $44^{\circ}56'$; but chief of them all is this reason, that the astronomer stationed there, in the immediate vicinity of lofty peaks, will easily be enabled to visit them with his instruments, and repeat there all the most promising experiments on mountain astronomy every summer."

"Have you ascertained the easy accessibility of the said peaks?" we inquired.

"I don't know what you would consider easiness," replied he, "but we had a party of a hundred men encamped for three months on Mount Ararat last summer, placed our theodolite on the top, and obtained most accurate observations in all directions."

"Have a care what you are saying," we ventured to suggest. "Do not you know that there is still a strong prejudice throughout our Western communities, that the summit of the present Mount Ararat is the identical spot on which the Ark grounded after the Deluge; and with some, that even the remains of the sacred vessel are still there, and might be seen and touched, if insuperable natural difficulties did not effectually prevent the impious prying of inquisitive men? Why! though in England they would be perfectly ashamed to own the Armenian Church, yet

have we seen cases upon cases, amongst the educated too, where they love to treasure various Armenian traditions of the name and history of this Ararat mountain; and in a cathedral town we were even present once at a very determined demonstration, by a well-meaning and learned man too, that the alleged ascent of your Professor Parrot, of Dorpat, many years ago, could never have taken place; and that therefore, spite of what he said as to the simple snowy surface he found on the mountain-top, there was nothing yet found to shake any person's belief as to the real existence of those more than interesting remains of remotest antiquity, and which all the peasants of the surrounding regions traditionally declare to be there!"

Our friend, however, was not at all disturbed; he merely took two moderately strong whiffs, and then said very calmly: "With prejudices and traditions we have nothing to do, when we are making scientific observations. And I have not merely to reiterate that our surveying party was on Mount Ararat, lat. N. $39^{\circ} 42'$ and long. E. $44^{\circ} 35'$, all last summer, and in the force stated, but that the leader of the party, General Chodzko, Russian Surveyor-General of the Caucasus, is at this present moment lodging in this very hotel; he has brought all his books of observations with him, is extremely anxious to make your acquaintance, and I beg you now to accompany me

across the yard to the rooms he is occupying, and where we are certain now of finding him at home."

The General was living in modest style ; though the military cloaks of himself and his aide-de-camp, grey with silver ornaments, and his attentive soldier-servant, filled the antechamber of his room in a more effective way, than we civilian strangers could manage with ours. He, General Chodzko, was a Pole by birth, and was working away as genuinely as any Russian for the advance and glory of the great Slavonian empire. Rather short, but strong built, with pale visage and refined features, he had much that sort of countenance which may be seen in many of our old colonels of Royal Engineers in England ; and like them, seemed of much capacity for either field or office work.

He opened before us a variety of his observation-books ; and one of them containing outline panoramic sketches from his various theodolite stations as he had tracked his way with triangles from the level steppes, through gradually undulating country, until he had reached the Caucasian mountains,—was especially interesting. Such interminably numerous and steep peak-points of mountains as the Caucasus showed,—speaking volumes for their deep and steep valleys between, filled in summer with rich vegetation, steaming vapours, and virulent fevers,—we had never seen before. But still, that was not what we

had immediately come about. Where was the ascent of Mount Ararat?

The official book was at once laid before us ; for the scientific report had already been printed in a thin folio, with plates of the great triangulation, in which the Ararat peak forms an important central station. There was a lithograph also, representing the camp of the General's party, as it was established on the plateau between the two summits of the mountain ; and, leading away from their tents to the N.W., was pictured, and also detailed in a plan, the winding path by which the theodolite and heliostat men ascended and descended to perform their scientific service of the great peak, 17,210 feet in height above the level of the Black Sea. There were also duly printed the tables of horizontal measures of azimuth, and vertical measures of depression of the numerous interesting localities visible from the summit of the "Koh-i-Nuh," or mountain of Noah ; such as the river Araxes, and Lake Van with its oscillating bottom ; the town of Erivan, where Noah first planted the vine ; and the city of Nakhdjovan, or "place of descent," the first spot at which the patriarch stayed his course, and settled when he came out from the Ark ; the richly serrated range of the Caucasus to the north ; to the east, the plains of Persia ; and to the west, the mountainous ridges of Asiatic Turkey. These notes of numbers and places were accompa-

nied by many closely printed pages of explanation and description ; amongst which, one sentence was pointed out to us as signifying that the author hoped to produce, during the approaching winter, a popular account of his ascent and sojourn on the sacred mountain, and to publish it in St. Petersburg in the spring of 1860.

“Bravo !” we exclaimed, rather gladly closing up the official report, with its almost cabalistic-looking Slavonian letters ; “and in what language will it be written ?”

“Russian, of course,” was the overwhelming reply ; “what else would you have us do ?”

Alas ! thought we, here goes another book of modern science and useful information to increase that most notable stock which the mightiest nation of the earth is accumulating, and mentally feeding on, and strengthening itself with, and which we of the West do yet so pertinaciously and suicidally ignore even the very existence of.

It is surely, we went on thinking, a strange infatuation that we have in Great Britain, anent the language of the people of the Tsars !

“Russian literature,” have we heard a learned lawyer exclaim ; “there is no such thing ! Who are its authors, who are its writers ? Can you name me more of them than you can count on the fingers of one hand ?” And none of the party assembled could

or would. And so, twice over during the last few years, when magnificent schemes of extension were drawn out for the improvement of the Edinburgh University, and the modern language department was to be made especially full and complete, when Teutonic, Scandinavian, and Romanic were mentioned, with all their sub-varieties of Dutch, German, Swedish, Danish, Italian, Spanish, and Portuguese,—yet not a word was introduced about Slavonic in general, or Russian in particular.

But in St. Petersburg, what different sentiments we heard, and from men who knew what they were talking about ! Thus, an old philological professor, by birth a Dane, but since naturalized as a Russian, took up the subject and discoursed on it much as follows :—“ In the Russian language,” said he, “ you will find condensed all the best natural characteristics of all other European tongues ; for sturdy eloquence, close debate, and epic grandeur, it is equal to English ; for the pretty nothings of politeness, vying with the French ; for gushing outbursts of heartfelt feeling and liquid flow of musical song, the very reproduction of the Italian ; for terse expression, equal to Latin ; and in constructive power in producing new words for the representation of the new wants of advancing knowledge, fully above either the ancient Greek or the modern German ; while, as a crowning perfection, we have an alphabet

and an orthography which are perfectly phonetic ; so that the peasant of genius, who teaches himself to read, pronounces what he reads, just like a councillor of state, or any educated man moving in the higher circles of the metropolis. Do you ask what we have accomplished in this language ? Well, now, that is a very important question, and we thank you for asking it, for we really do wish that you would just look into the matter, and prove it beyond doubt for yourself ; and that is what we should be so glad too, if all your nation would do likewise. Only step into some of our native booksellers of Moskva, as well as St. Petersburg, and look over their printed catalogues of Russian authors, forming of themselves books of 200 and more pages ;* see their stock of Russian works, amounting not unfrequently to 100,000 volumes ; inquire the prices paid to Russian authors,† either of serial literature or solid tomes,‡

* E. D. Clarke's Travels.

† Kohl's Travels.

‡ Under date January $\frac{1}{27}$, 1861, we have been favoured with the following particulars by an esteemed friend, a Professor in the University of St. Petersburg :—

“Of late, no statistical work on St. Petersburg has appeared. Statements are to be found in the calendars published in Russian and German by the Academy ; what is wanting must be gleaned from books and periodicals. Literary statistics are to be found for instance in the Reports of the Minister for Public Instruction to the Emperor. The last published is for the year 1858. During that year 1861 books had been published, whereof 1577 were original works and 284 translations, giving respectively 13,679 and 2,489

—and then say, why you expect that General Chodzko is to address a Russian community on a Russian subject in any other than their own language. Is not the audience sufficiently large, where the language, without descending to variations of it in use amongst border nations, is precisely the same through fifty millions of people, alike for noble and for peasant; unvaried even by dialect. Talk to one of our villagers on some of his more difficult subjects of village laws and agricultural institutions, and you will find his answers so clear and collected, in such pure Russian, and in such perfect grammar, that they might at once be printed* as he utters them. Perhaps there may be, as you say, a consequent want of picturesqueness in our not having local dialects and strange idioms with every few miles of travel over the country; but then, what a basis for political power such a language so uniform as ours, united to such a people, must afford! And in exact proportion as that basis is exerted, your various objections va-

sheets printed. In the same year 165 periodicals were in course of publication, and 50 licenses had been granted for publishing new periodical works.

“Authors of renown, writers of novels, get as much as £50 per sheet; other people may be glad to get as much as £7 to £8. The official journals pay usually £4; translators are remunerated at the rate of £2 or £1. Editors of periodicals earn the highest profits; writing little themselves, they try to keep their contributors in a certain direction.”

* Haxthausen's Empire of Russia.

nish ; for, rise only to a sufficient height to contemplate universal empire, not a petty rule like Napoleon Bonaparte's among the German and Italian states, but the effective empire of the world,—and then you will find variety enough, and even come to understand that you must have a linguistic centre of some sensible size, if you would be the leaven that would leaven effectually all the nations of the earth. We who rise as yet only to the present limited extent of Russia, find no want of picturesque interest in acquiring the languages of the many nations who are already within our borders, and who in return are rapidly adopting our language and our written character also. The number of these conforming peoples is increasing every day,—yes, every day,—and you must not be startled if you soon hear of some remarkable accessions in the south ; for the fact is, that England and France obliged us to accumulate lately in that quarter of our empire such an overpowering force as to have in a manner compelled us ever since to carry on the Caucasian war with unprecedented vigour.”

“But don't at the same time,” continued the naturalized Russian, “picture to yourself only slaughtering Kosaks riding through a subjected country ; for our first step after warfare is the much more peaceful and powerful one of schools,—schools high and low, with Russian books and Russian

letters. The original population under this treatment may seem to disappear, not, however, by Spanish-American practices, but simply by becoming Russians; and, with some exceptions, after a few years, they vie with ourselves in working to the utmost to develop the glorious destiny of the Slavonic name.

“You would like to know what we teach them in those schools; well then, why don’t you learn our language and translate our books. We set you an excellent example in that matter, for we translate into our language everything valuable that appears amongst you; but you in return are content to call us an illiterate people,* barbarians, and so forth, and will never allow that we have any authors of our own at all, unless, indeed, they consent to turn renegade, abandon their own language, and write in yours or some other Western tongue. Oh! don’t say now, that you didn’t mean anything so severe as that, for here is a case in point: our friend the General is going to write, (or publish, I should rather say, for I suspect his manuscript is pretty far advanced,) a popular account of his late adventures and most interesting experiences on that noble mountain, the mountain Ararat, and he has been in a position lately to learn more of its hoary summit

* We might cite several English and as many French authors, but would rather not.

than any other man of woman born since the Flood,—and yet you lift up your hands and deplore when you hear the book is to be in Russian; just as if being written in that language was equivalent, in polite circles, to its not being written at all; and that, even in spite of the cosmopolitan bearings of the subject, there is no one *savant* amongst you who will take the trouble to disentomb the work from the language in which not only the book is being written, but the project of the expedition was conceived and its performance successfully executed.”*

What we answered in return, it is neither here nor there to record, especially as we must own to having suffered just a little confusion before some of these arguments; and therefore rather enjoyed, when evening had at length arrived, the calming effect of a long and rambling walk in the neighbouring streets. They had too a novel aspect; for at every corner, and at frequent intervals along the

* We find the following in a late letter from St. Petersburg on scientific books:—

“The best handbook of Geodesy, in Russian, has been composed by General Bolotov. Compendiums of Astronomy have been composed by Gamaley, Zelenoi, and Pervostchikov. A Manual of Geographical Astronomy, by Professor Savitch; a German translation of this work appeared in 1850.

“The Memoirs: 1, of the Topographical Dépôt; 2, of the Hydrographical Dépôt; and, 3, of the Russian Geographical Society, are treating the objects in question in the Russian language.”

pavement, were apple-stalls,—the first we had seen in Russia; and all of them were loaded to profusion, and were scenting the air with a fine fruity, cidery odour, though indeed the apples themselves were rather green and a little withered. This day had been, in fact, the *festa of the apples*, and before its arrival no Russian will eat even of his own apple-tree and his own orchard; so all the fruit which envious gales of wind may shake from the overloaded branches are all picked up and carefully laid by in some secure garden-house, where not even a schoolboy can or will attempt to get at them, until at last the feast of the Transfiguration comes on; the apples are blessed; and then every one rushes to the long-preserved hoard, and to the trees, and the stalls, which spring up like magic wherever one turns; and men, women, and even the child at the breast, all indulge.

We were anxious, however, for something less acid, and so entered a *café* in the Nevski Prospekt, and had a comfortable tea; but on concluding the same, there was such a pelting rain outside that we could not venture beyond the door; so we went back and had a little more tea, and discussed how suddenly the clouds had collected, or formed, or risen from the horizon, and rain begun; just, in fact, as had been the case for several previous nights, only at a later hour, and with abundant ac-

companiments of thunder and lightning. Electrical displays began also this night, and the rain, instead of ceasing, only appeared heavier and heavier every time we looked out; so at length, to avoid worse things, we determined to dash through the thick of it at once.

Away then we went, my wife and I, through the dark night and heavy rain, while the pavement actually floated with water; and no great wonder, when the water-pipes of all the houses are made to discharge their floods full upon the surface, instead of into under-ground drains. This, however, was not by any means all; for the pipes being made to open out horizontally, and at a height of about eighteen inches above the ground, they shot out such voluminous jets of water against our legs, than when we were tired of jumping over the cascades, we could only lament that we were not accoutred in the big Russian knee-boots.

Under some of the newer palatial government-offices there was a cessation of the side-discharge, the pipes being then conducted under the pavement; but the effort had been great for the architect, for he had made them all open out as usual at a foot-and-a-half from the ground, and then had introduced them into a sort of inverted iron box, of the bigness of an elephant's foot; then he had met that from below by another iron box, from the

base of which another pipe descended under the surface of the flags.

When at last we reached our hotel, there were grand spoutings going on in the inner court there ; for the water came down from a whole circumference of roofs to ours, and in shoots from the edge of that at every four or five feet of length ; so that, what with the direct streamings and reflected splashings, it was not very easy to track our way safely over the well-washed stones. But we noted the candles at General Chodzko's upper window, and the General himself quill-driving hard into the middle of the night. His and M. Otto Struve's project for founding an Observatory at Teflis in connection with the pursuit of "Mountain Astronomy," had already been placed in the balances of state, and was very shortly to be decided on by the Emperor himself.

CHAPTER XVI.

HORSES AND DRIVING.

AT either end of the hotel's street were specimens of those long, low, feeding-boxes, which are provided every here and there in St. Petersburg for the droshky-horses; and if we wished to know any morning whether it were likely to rain, we just looked out to see if the horses had their tails and manes (for their manes are about as long as their tails) tied and knotted up out of reach of the splashing mud, or if they were left flowing freely in their native beauty.

The horses themselves were almost invariably thorough good ones; clean-limbed and good-tempered; certainly very patient, standing quietly half the day, and part of the night too, by the side of their too-often empty box, in pelting wet and unquiet winds. Yet they got good food somewhere and at some time, for the generality of them were

very fat and even punchy in the barrel, though keeping up all desirable fineness and delicacy in their fetlock-joints. Sometimes we actually fell a-laughing at certain of the horses, they were so extraordinarily corpulent, and withal, tricked out in such a pretty plaything-sort of harness. Across their good-natured faces glittered the thin diagonal lines of a slender head-stall, studded with silver, and appearing to serve only to suspend a silver star in the middle of their foreheads, where it shone forth at intervals whenever the wind parted their mane's abundant frontlet locks; and nearly every other part of the trapping was as gossamer and as richly ornamented. With some large coach-horses, the chief part of the caparison about their bodies was apparently no thicker than the red-tape of Treasury clerks ("narrow red-tape" is what is officially enjoined); and much we tried to find out where the necessary strength resided, for that amount there evidently was somewhere, when horses so harnessed were daily whisking heavy carriages along at racing pace over every description of pavement.

The theory and practice of harnessing has evidently been deeply studied in Russia; and they not only know where they must make straps thick and where there is no particular strength required, but they seem, in the latter case, to rejoice in showing how amazingly close they can shave away both

breadth and thickness of the various bands, and yet not pass below the minimum that the case demands, These things are pretty well understood in England also, thanks to the *esprit de corps* which, though much abused, so generally prevails amongst all those Britons whose occupations are connected with horses. For from this spirit it is that the officers of our cavalry regiments, who must surely have enough to do with horses in the way of business, yet make it their relaxation to set up a four-in-hand coach, and find their pride and delight in manœuvring its motions with their own hands in a handsomer style than would be possible to peasant-men. And then again, those same peasants, when they may have been haply drawn away from their primitive life and become attached to a coach-building factory in Long Acre, or a horse-training establishment in Newmarket, become in their turn transfused with the same ardour to excel. Each new vehicle that is turned out with them is to be something neater and nattier and speedier than any previous one ; a fit name, and a knowing one, is given to every part of the machine : the reins are the ribbons, and the whip is the tool, and therewith the plebeian Jehu, with a flower in the corner of his mouth, tools his new-fangled drag along some impossible side-slopes, or astonishing corners, in a manner that elicits the praises of all the horsy world about him.

In his way he is a paragon, beyond all doubt, the British driver ; and paragons too are all the other hands whose several callings supply him with the means wherewith he makes his public appearances ; but yet, without disrespect to him or them, we will say that the Russian driver is equally deserving of notice ; has attained at least an equal success in the object of his pursuit, and by means of a perfectly different road. To judge how different the road, only consider the two cases in this manner. Though ordained to inhabit an island, and of no great size, the Briton has by nature an indomitable longing after speed, and he attains it mainly by his own muscular exertions, and work-shop inventions ; so he looks upon the whole affair in an operative sort of light ; mounts himself high up on an elevated box, and twists and turns and governs at his pleasure the obedient horses that are down below his feet, while he himself enjoys a perfectly *lay* state of mind, not to say anything worse of it.

The Russian, on the contrary, the inhabitant of the broadest plains of the greatest continent, is solemnly admonished by the governing necessities of his country to attain a faculty of traversing space ; safety and ease if he can, but speed by all means, and speed before everything, with power to keep it up for long. So he truly girds up his loins and addresses himself to the task with all the serious-

ness and grandeur of a religious duty. In the vehicle which he constructs, whether sledge or wheeled-carriage, he places himself low, he abases himself with regard to the horse, who is therefore the conspicuous object, and a noble one too, as he sweeps past with his spirited form and feet that spurn the ground behind him.

Among such idle ne'er-do-weels as Kosaks and Little Russians, the horse is used chiefly for riding on; but with Great Russians, who are always looking to the real business of life, to transporting their substance and goods, as well as themselves,—driving is the universal mode for utilizing the powers of that inestimable animal-gift of God to man; and drive accordingly all the Great Russians do, with a fervour and a passion for it which nothing can surpass, except the solemnity with which the occupation is approached and the dignity with which it is carried out.

You see on the box of every Russian carriage a man of majestic proportions, his countenance is grandly stern and sedate, and adorned with the beard of wisdom. His vesture consists of a long flowing robe of dark blue cloth, diagonally folding in front, belted with a silk sash, in which during summer his large gloves are stuck; and covered as to his head with a broad-brimmed shovel hat, as though he were an English bishop; and when the signal is

given, he merely raises the reins, and instantly the horses start off at full speed. Away go the horses forward, and away go the milestones in the opposite direction, yet no whip reveals itself, no fussy excitement is indulged in ; you merely see the statue-like man holding out the reins with both hands at arm's length before him ; and he then appears the very high-priest of driving, benignantly extending forward to dispense the blessings of locomotion for the good of humanity.

If there was not a vast deal more in reality than appears on the surface, why plainly, such a stolid sort of being as a Russian driver would soon be outsped in the race by some sharp little rascal of a man without a single high or saintly feeling about him. But there must be much more ; and the fact is too, that not even the cleverest black-leg can get up so early in the morning as to circumvent a Russian, and least of all a religious Russian ; for he begins each morning's devotions the previous evening, and has got to the grandest of his church ceremonies for the day an hour before sunrise. Hence, when he comes out into the world, he is armed at all points ; and in the driving case, he has doubtless considered well and mercifully beforehand, if the task he intends to place on the noble horse be humanly and equinely possible ; and if there is any doubt, he has such a strange knack of, in a sort of Robinson Crusoe way, just

hooking on another horse by the side of the animal already in the shafts, though the vehicle should never have been intended for more than one horse. Or, if a little more power still be required, he hooks on another horse on the other side in an equally impromptu but most effectual fashion. These supplementary horses, as is well known from pictures of Russian life, are reined in so as to stand at a diverging angle with the central line of traction, and their heads are more turned round still towards their respective sides. But so far from there being anything of that painful restraint which foreign artists usually impress one with, when they make the second horse getting black in the face, and his eyes starting out of his head, as if he was being throttled,—we, on the contrary, seldom saw anything more easy or graceful; and we must solemnly vow and protest that to us, such lateral animal rather looked as if he had hooked himself on; or if not that, was quite free and galloping along by the side of his friend in the shafts just to keep him sociable company, and had therein become quite interested at the novel effect of the stones on the road, being all drawn out into long lines by the speed of the rattling pace the happy party were going at.

Where all these horses came from* we don't know, especially as they are almost invariably such fine

* The number on our Isvostchik's ticket on one occasion was

creatures ; but certainly to bring out plenty of them, when that can be done, is the way to solve the problem of getting over the ground. Only fancy the rate at which a Hyde Park Guardsman in his Hansom would dash along, with a couple of Mazeppa-like steeds loosely tacked on to either side of the blood animal in the shafts, and all of them allowed to vie with each other, seeing which of the three will gallop the fastest ; and this *is* the way in which every now and then, in the broad streets and immense open squares of St. Petersburg, you may behold a Russian military officer* flying past, his feathers and his cloak-fastenings streaming away behind him,—only that it is not a Hansom he is in.

9816, and we were told that there were between 10,000 and 11,000 of them ; *i.e.* drivers of the droshky or cab variety alone of the St. Petersburg vehicles. And on an August evening, when one of the lesser “Feasts at the Graves” had been interfered with by heavy rain, we found the chief streets filled for miles with almost continuous lines of passenger carriages.

* The distance between St. Petersburg and Odessa is 1876 versts (1251 miles), and used often, according to Dr. Lyall, to be performed by an *aide-de-camp* in six or seven days. But when snow falls, not only are the horses themselves capable of more work, but the friction of a sledge on the snowy surface is so much less than that of the wheels of the best carriage on an ordinary road, that an improvement of more than one-third may be fully counted on. Peter the Great, at such seasons of the year, used to pass between St. Petersburg and Moskva, 728 versts (486 miles), in forty-six hours, at a date when the Royal mail from Edinburgh to London occupied something like weeks in getting over a rather shorter distance.

The forms of carriage that pass you in the course of a few minutes in the business parts of the city, though not including that most delightful of cabs, are most remarkable. Some of them seem to be merely the idea of a vehicle reduced to its most abstract principle ; for the only thing in the shape of a body is a longitudinal bar of wood, that serves to connect the fore and hind axle-trees of the wheels, and on such long bar both driver and rider must sit and bestride as they best may. A slightly advanced form of this vehicle is, when a little low seat is erected in very thick timber, immediately over the hind axle-tree ; and the strong man who has to sit there, tries to break the concussion by using a soft cushion. Then comes an extension of the said unpainted timber seat, extending in length, till it looks partly a canoe, and partly a coffin ; but wherein a staff-officer, sent off on a long journey, unrolls a feather bed, and lays himself down at full length, by day and by night, in his ceaseless travel ; and obtains the same sort of comfort that the untutored mouzhik we saw yesterday seemed to have already arrived at, fast asleep on the bed of manure that filled his telega, and apologized for its want of springs.

“ Why can we not hire a telega ? ” that is, a mere rude cart, “ to remove our luggage in, for less than eighty kopeeks ; when we have to pay only twenty for a ride in one of the neat cushioned droshkies

with their very springily hung seats?" This we addressed to a Russian; and he explained, that the ornament of the carriage was as nothing; the feed of the horse was the main thing; the horse in the telega was just as fine an animal, as he in the droshky, and required as much food; while the engagement of a telega usually lasted longer than that of the quicker-moving vehicle; so there was the whole mystery.

With all the vehicles, quick as well as slow, the wheels are generally small: with the droshkies, ridiculously small. "Why so?" we asked very frequently; but could get no other reason in answer, that what was returned, when we inquired on another occasion, how it came about, that while every Russian man had such splendid boots, tall, strong, waterproof, and shapely,—each Russian woman was in shoes, either wretchedly down at heel, or swathed about with rags and ropes! It is all on account of their "economy," said a young Germano-Muscovite, who certainly did not spare expense on his own understandings, for the materials showed as rich a surface as the most expensive of book-leather. In the matter of the small-sized droshky wheels though, some allowance ought perhaps to be made for the poor Isvostschik, who can only draw money from his droshky during half the year; and through the other six long months, he must even pay warehouse-

room for it, while the streets remain covered with snow and sledges rule supreme.

Another feature that took our attention, was presented by the great arch over the head of every harnessed horse. "Why do the Russians find it invariably necessary to erect a structure, which is never on any occasion seen in England over a horse's neck?" was a query we often proposed to ourselves. We first looked extensively to see that the practice was general; and found in several days' search, not a single exception. In the town vehicles, indeed, the arch was smaller, lower, round in section, and black in colour; but still it formed a very notable and apparently an essential equine superstructure; and had probably been derived by tradition from the country practice, where, in farmers' carts bringing in produce, you saw it in all its glory: a lofty gothic-shaped arch of wood, deep and stiff to a degree in its own plane, and richly ornamented. One man paints his horse's arch, green; another, red; another, gilds his; and another, with better taste, carves it in arabesque; but still leaves it of eminent altitude and vast strength. "Oh, it helps the horse on so!" said one gentleman, who was showing us, with allowable pride, one of his stout telega-horses, that had just brought in a heavy cart-load from a distance of twelve miles; and was spanned by a bow, half as high as himself, above his shoulders.

That, however, could not be the full explanation, and for awhile we could only bear testimony to the importance evidently attached to the presence of such arches ; and to the existence of large manufactories in St. Petersburg for making them by steam ; but we ultimately connected them with another characteristic, equally generally to be seen amongst Russian carts and carriages of every description. This feature, or rather the first part of it, is, the excessive length of the nave of the fore-wheels, forming a hollow cylinder for the axle pivot, and extending outwards nearly two feet beyond the plane of the wheel. Now this is a strange style of a build for the fore-wheels of any vehicle ; and something remarkable when we find it invariably followed in one particular country. Without quarrelling, however, with it, let us take the existence of these long fore-nave axles as an accomplished fact, and see how the Scythian chariot-builder has utilized them. He plainly perceived their mighty strength, and then rejoiced to think how they would enable him to stiffen the horse-shafts and without much increase of weight ; by carrying a rope-stay from the forward end of the shaft, back to the outer end of the axle or pivot.*

Thus then it is, that each shaft is strengthened laterally, by something similar to the bob-stay un-

* See Plate 2, Vol. II.

derneath a cutter's bowsprit. But again, each shaft is by this only strengthened in one direction, *i.e.* to resist an external force from its own side; so then comes the crafty man again, and in a manner binds the two shafts together firmly at their outer ends, by attachment to that said solid gothic arch of wood, whose use we had previously been puzzled about; and in this manner he makes a rather complicated, but double-trussed, shaft arrangement, capable of resisting either external or internal forces. It is strong, too, on such perfectly different principles to those on which the shafts of a British cart or gig are strengthened; that the very parts, which with us are made thickest, viz. the bases, are in the Russian vehicles, made thinnest; thinned away, indeed they are, to an absurd-looking slenderness; but yet very seldom or never giving way.

This Russian doctrine, then, of strengthening horse-shafts, once adopted, reacts in the modelling of the naves of their fore-wheels; and causes them in country vehicles for great burdens, to be made longer and longer, so as to allow the rope-stay to stand out at a greater angle to the shaft; and it is, in outward aspect, a something intensely Sarmatian and picturesque. For a woodcut representation of it as it is, see Lyall's 'Travels in Russia' (p. 1, vol. i.), drawn evidently on the spot: and for another view of it, with the details as they are not, see the

vignette to the eighth chapter of E. D. Clarke's Travels, a vignette acknowledged to have been prepared by an artist resident in England.

But think you that it is all contentment and satisfaction in Russia with their driving? No! no! or how would they have ever reached their present eminence and speciality in the art! The truth is, indeed, that the St. Petersburg ladies, if not to be spoken of as too difficult to please, are at the very least, acute critics; and after many trials are agreed to insist on being furnished with English carriages; and English carriages accordingly their lords and masters are obliged to supply them. Hence it came, as part of quite a general law of society in the Nevski Prospekt,—that being very kindly invited one evening by a hospitable family to enjoy a drive to the “Islands,”—we found ourselves welcomed into a chariot, that had been built in London: though it was now drawn by Russian horses, and driven by a Russian coachman.

In this excellent combination, we sped past the Winter Palace, the Hermitage, and all the other palaces that form a continuous façade, for a verst in length, until they are terminated by the “Marble Palace,” which is just now being fitted up once again, to serve as the residence of another Grand Duke Constantine, viz., the eminent naval one; and then crossed the Neva just above the Citadel,

by the Troitskoi Bridge; a floating structure, reported 2700 feet in length. There were many carriages passing to and fro, and how magnificently their horses did dash over that half-mile distance of resounding plank! They have generally well-formed shoulders these Russian horses, and lift their knees bravely, as if with vehement gestures, even above the horizontal—and then down with them again, as if determined to leave the very earth behind. Meanwhile, each grave-faced, long-bearded coachman graciously extends himself forward with both hands level in front of him, to slacken the lines of those fair white, or delicate green reins, and allow his noble steeds to exhibit their powers of movement, in whatever manner may delight them most.

After skirting for awhile the fortress grounds, we passed through some two or three versts of suburban buildings, and suburban wooden walls of solid plank in huge panels; with suburban gardens, and finer than suburban trees, continually on the increase; and when we had thus coursed through all the breadth of “Petersburg Island,” we entered on a series of other islands,—the Aptêkarskoi, the Kammennoi, the Krestofskoi, and others where little but country seats, embosomed amongst extensive woods, or choice tracts of horticulture met the eye. The number of carriages passing and repassing showed us to be still in a fashionable afternoon drive; but

then what a drive, for distance ; and these islands of Neva's delta, do spread out so perfectly flat, and are penetrated through their thickest forests of trees with such magnificent broad and inviting roads, that you might continue at a gallop all the afternoon and never cease opening up fresh scenes. For our own part, we soon lost count of the number of the deltoid arms of the river we crossed, Nevas and Nevkas, of every degree of size ; of the imperial and grand-ducal palaces we sighted, the villages of country seats we passed through, the green openings among the trees, where pic-nics are held in summer, and "Russian mountains," of ice, constructed in winter. But at length, when there was evidently a converging of numerous equipages, we escaped suddenly from the continually tree-shaded road, and emerged on an open beach, where the carriages were mostly drawn up on one side, while their owners were enjoying on foot the pure, balmy air, and the exquisite western scenery. In front, and to the right, beds of reeds gradually joined a watery surface ; to the left, beyond a bright arm of the river in which two or three fishing-boats were plying their picturesque vocation, stretched ridges of fir-tree woods ; and thence, across the mouths of the Neva, you looked right away to the Gulf of Finland, decorated with its many sails, whilst its waters were rich reflections in full of all the transcendent glory of the twilight sky above them,

“La Pointe à Yelaguine” is this delectable land’s-end termed; and we needed good Russian horses, and a long northern twilight, to bring us back to our homes at a moderate hour, from a distance which is something like a dozen London parks, tacked on to each other, end to end. But it was a splendid drive, and splendidly performed both out and in. And as we returned just before nightfall over the long line of the Troitskoi Bridge, with a low golden moon shining into the broad expanse of the river on our left, and the interminable array of red pillared reflections of St. Petersburg lights quivering in the still broader breast of water to our front and right and even in the far away distance where, just at the diverging of the Great and Little Nevas, the classic forms of the Bourse and its rostral columns faintly appeared,—as we saw and admired all these far-spreading scenic and almost aerial decorations, we could not but then confess to the beauty as well as majesty of Imperial Nineveh of the North.

The kindly Russian family we were with had manifested all along the most delicate taste in abstaining from either giving praise to, or demanding it for, anything they had shown us; but they were at length patriotically warmed to their inmost souls, which they had indeed possessed with a long patience, on hearing a spontaneous confession that these views of their metropolis and its environs had been

beheld with rapturous delight. There was then only one thing more, they said, which they would request of us. It was this,—that we would pay a sight-seeing visit to the Imperial Palaces of St. Petersburg also. Here were two tickets of admission to the Winter Palace and the Hermitage, and could we refuse! Of course all severe objections vanished after that, but we could not go next day, for it was Sunday.

CHAPTER XVII.

ANOTHER SUNDAY.

August.

WHETHER the data we examined were quite correct or not, there is now some doubt ; but as they led us then to expect that there was more of the truly National Church to be witnessed in St. Alexander Nevski, than in St. Izak, cathedral of St. Petersburg though it be, we rose this morning at an early hour, endeavouring to reach the former building in time for its forenoon service.

The road was plain enough, being simply the Nevski Prospekt; that long, long street, which slowly and steadily increases in breadth and magnificence, as you trudge along past verst after verst of its broad blocked houses in your way from the Admiralty Square outwards. Thus do its proportions continually enlarge until, after having passed innumerable cross-streets, churches, theatres, library, the

third canal, and that by a bridge decorated with four spirited groups of wild horses and their tamers, in bronze by a native artist in the person of a veteran subaltern, you arrive at the Prospekt's fashionable culmination, in the Annichkoff Palace ; residence of the Emperor Nicholas before his accession, and retreat to which he afterwards carried his Empress, in 1837, on the night of the destruction of the Winter Palace by fire ; and since then the abode of Russian diplomacy. From this point forwards, and to the large and airy Liteinaya Street, the same aristocratic character extends ; freed from the bustle, business, and shoppy character of the more central regions, and not yet arrived at the unarchitectural negligence of the suburbs, or the outskirt poverty of every great city. In fact, in this region, and eastward of it, are most of the mansions of St. Petersburg-residing nobles ; here, probably, quite safe from those floods of the Neva's mouth, which have from time to time done so much mischief to the lower part of the city, and which foreigners do so delight to detail the proofs of, that they must some impending day sweep away the whole of this metropolis, and leave not a wreck behind to show where once St. Petersburg stood.

By the time, however, that we had arrived at the third verst and a fourth canal, lo ! a citizen air again begins to creep over the houses, and presently a

large open place presents itself, with the Moskva railway terminus on one side, and shops, with railway hotels above, on the other. Beyond this point, the Nevski Prospekt continues, but at an angle with its former self, and in rapidly increasing deterioration. The bakers, with gracefully painted representations of abundance and with gilded signs, much in the shape of a solid true-lover's knot which passes here as the typical form for a loaf of bread, still occasionally deck the scene; but *modes et robes* are gone; no more does the legend "Фотографія" catch the eye; and there are instead, whole rows of old iron shops, and then whole rows of harness shops, dealing largely in the brass roses and other ornaments of country horses; then comes a large damp market-place, for diseased and broken-down carts, one would think; then a continuation of the broad street, but marked now only by garden walls, and an occasional monumental stone-cutter's cottage; and finally the whole concludes in the semi-circular entrance-gate of Alexander Nevski.

Through the gateway, through the cloistered walls of shady trees, through ladders and scaffolding and repairing materials, and into the church we penetrated, but only to find the service already commenced, and all the body of the church filled with so dense a body of standing worshippers, peasants mostly, that there was no hope of arriving within

earshot of the ikonostas. Continual additions were being made to the numbers, as both men and women kept momentarily dropping in, and all of them taking up their places, humbly and quietly on the outside of the throng ; until presently, there swaggered in a lumping, burly, military officer, determined apparently to make way both for himself and a lady companion ; so putting his arms akimbo under his great, two-foot caped, bulky Russian cloak, he threw himself upon the people and soon trod down and elbowed out so broad a lane, that the lady tripped after him easily enough ; and we, at the instant, seeing our opportunity, just stepped in after her, and so followed in single file, with the sides of the ruptured living pathway closing in again immediately behind us. In this manner we approached quite close to the steps in front of the ikonostas ; and to that part of them near the centre, where, between two plated and jewelled pictures with trays of wax lights burning in front of them, a priest was reading from a large book placed on an *analogion*, or movable reading-desk, amongst the people ; and from time to time he was chorused with deprecating song, from the groups of ecclesiastics within the railed enclosure.

The clerical body was in great strength ; on the right-hand, looking towards the *royal doors*, was a choir of boys and lads of various heights, like a

collection of organ-pipes ; and on the left, was a similar box full of grim-looking bearded men, dressed in black garments, with, on their heads, tall dead-black cylinders, from which sweeping streamers of mournful crape depended behind, mixing with their abundant flow of curling hair. These were bass singers, and grandly they answered from time to time the quavering pellucid notes of the little boys on the right. In the centre were many priests of the Chrysostom species, in heavy garments of gold and silk ; one of them, the Metropolitan himself, we believe, was surmounted with a jewelled head-gear, held a glittering diamonded staff in hand, and wore knightly orders round his neck ; but all the clergy were equally decorated with their own massive beards, and hair parted in the middle and falling in more or less curled condition down their shoulders and backs.

We could not undertake to describe all their movements ; but that effective scene of the beseeching before the golden gates, and thrilling streams of penitential song ascending up to, and resounding in the lofty central dome of the church, was repeated. The door-posts did relent to it ; the Metropolitan, Archimandrite, and all the priests, not only did therefore come out again, but formed a procession that penetrated into the body of the church, and there established a low *amvone*, or platform, in the

very centre of the congregation, and on that, setting down one of the portable *analogions*, (amazingly portable things by the way, being mere reading easels in deal; but, with an embroidered cover thrown over them so as to look for the time as if most solid,) they placed the sacred volume of inspiration upon it, and from thence read blessed words in the ears of a faithful people. At another *analogion*, in a retired corner, a priest at intervals read certain forms of prayer, those for the Imperial family being distinguishable by the proper names, and read all of them with the rapid utterance before remarked; but whenever it came to be the turn of the priest on the *amvone*, with the volume of the Gospels before him, he read out slowly, clearly, and with reverence, the inspired words of the Book of Life.

This scene had closed; the Metropolitan and his golden-clad companions had retired, the royal doors were closed; but still the choir on either side remained; and the people thronged more pressingly than ever to the steps of the ikonostas; crossing and bowing only, for they could not prostrate in the thick of the crowd; and squeezing up to the pictures to stick in a candle with its elemental testimony of burning flame. A low litanic lament was indulged in from time to time, by the musical voices of the choirs; but the golden gates remained firmly closed, and the space in front of them vacant; when

suddenly a scene occurred, that we thought at first must have been a mistake.

There was an intense pressure for a moment in front of the enclosure, and then forthwith, from the dense ranks of mouzhik men and women, there escaped forth two finished young ladies, with bare heads, and in low dresses of abundant muslin flounces. Airily they tripped up the two steps to the permanent *amvone* of the altar, one to the right and one to the left; crossed themselves, prostrated before the ikonostas pictures, sailed up to them, and devoutly kissed their frames; crossed themselves again with submissive bendings, and then themselves crossed over to opposite sides of their stage, and kissed again their then respective pictures.

What could all this mean?—and they had been followed into the sacred enclosure, by a servant-looking woman; and in a few minutes by half-a-dozen country-women, apparently, bringing with them their children of various ages and even one baby in arms. While these were arranging themselves with their backs to the people, and their faces to the holy doors, the servant-woman got up to one of the young ladies, whose dress she seemed to think out of order about the back; and much she busied herself to adjust it to be as it should be; nor was she half contented to let her young mistress only half done up, go forth with her sister-friend

again, and make with her, after more signings of the cross, one long prostration to the floor, which hid their glossy heads of hair for full five minutes behind mountainous heaps of gauzy muslin.

By this time, however, the party were joined by some priests, who had entered at the small side-doors, and with the assistance of the two choirs of singers, they all expostulated before the great gates, until we saw the crimson curtain slowly drawn, and amid clouds of blue incense smoke, and the flickering flames of distant candles, the bars opened, and the Metropolitan and his assistants issued once again ; while one of them in particular, bearing above his head a large golden goblet covered with a richly embroidered napkin, and supporting it ostentatiously with both hands, came out in front of the group, in the eyes of all the people.*

Hereupon, more impressive than ever became the crossings and bowings of all assembled, as well as the attempts to prostrate ; the priests too, showing the example ; while the wailings and supplications of beautiful song welled forth in torrents from the choirs, and ascended aloft in echoes fainter and more faint, until at last we actually thought the strains were taken up anew in the vault of the dome, and carried further heavenward by aerial singers ; and while the last of these notes could still be heard, at a height

* See Plate 1, Vol. I.

apparently almost beyond the roof, suddenly from the outside of all and from above, there came down upon us clanging notes of great brazen bells that joined and rejoiced with, while they electrified all the singers, informing them that at that instant the long-awaited, prayer-invoked, mysterious transubstantiation had taken place in the napkin-covered golden goblet.

So it was taken down from the head of its bearer, and first, the *asterismos*, a star-shaped holder, (emblematic of the meteor of the Nativity; as the paten or dish, on which the cup rests, is considered to represent the bier whereon the body was laid after the Crucifixion,) was removed; and then the napkin, or *aer*, the first of the three veils; an ejaculatory prayer was then uttered, and the second veil raised; another ejaculation, and then the third veil was lifted off; on which, with the priestly *cochleare*, or spoon, the contents, mingled wine and water and unleavened bread, were conveyed to each of the communicants' mouths, beginning with the young ladies in white their hands devoutly crossed upon their breasts, and descending at last through all ages, until they came to the baby in arms. The creature is obstreperous; but one big priest, acting with both hands, pulls its nose and chin asunder until another contrives to empty the spoon more or less into the intervening little cavernous receptacle,

and a third enormous man wipes up the superfluous drippings from the child's lips and face with a golden towel.

“What horrible impiety, do you exclaim, O western reader, to administer the Holy Communion to an unreasoning infant? Nay, be not so little charitable; for if an infant can understand Baptism, why should it not appreciate spiritually the ordinance of the Lord's Supper as well? and doubtless the Greek Church finds as much warrant in Holy Writ for the one, as you do for the other with or without the assistance of godfathers and godmothers.” Of this, however, we felt as certain as of anything we could judge of from human manifestations, viz. that whatever was done in Alexander Nevski that morning, was done to the believing edification of the vast majority of those who were present, and humbly assisted at the service of their church.

While the congregation were departing, we wandered amongst the more distant aisles and galleries, looking at secondary copies of Italian sacred paintings, and then gradually worked back, as the space emptied, to the ikonostas region again, with its plated Byzantine pictures, and their diamonds and rubies, and whole boxes filled with pearls. The scene was gazed on by portraits of Peter the Great, and the Empress Catherine I., but the chiefest subject of interest to all the sturdy peasants, and the

one which they last lingered near before leaving the church, was the shrine of St. Alexander Nevski.

That shrine was no doubt of silver, they say five thousand pounds in weight, but that was not the attraction ; neither that nor the bas-reliefs of the Saint's great victory on the Neva led the attentions of the people. Tomb and bas-reliefs, both were merely the homage which despotic monarchs in recent times had felt themselves compelled to pay before the faithful traditions of their subjects. Why the canonized Duke Alexander of 1240, should have apparently by one victory, so fixed himself in Russian affections, we may investigate by-and-by ; but meanwhile, there is no doubt that his life forms one of those remarkable seven-leagued stepping-stones in past history, which popular tradition so loves to tread by, in following from one great monarch to another. Happy intuitions they then become, by which,—when consigning to utter oblivion all those intervening petty crowned heads, whose dates of accession and decease are all that can be said for them,—the illiterate peasant eliminates everything that is really noble in his country's annals, digests it for his mental good, and shows himself minutely intimate with the occurrences of a thousand years ago. Living thus in mental contemplation of the chiefs only of the human race, like the Scots with their Wallace and Bruce, the poorest Russian or any

other peasant learns to think and act in a kindred style of feeling; and when this comes to be the case also with the majority of his fellows, the permanence of that country's empire, and the grandeur of its future are far better ensured, than by never so much refinement of its politer society or splendour of its courtly circles.

Autocrat as was Peter by birth and by law, gifted too, to lead and command his subjects' inclinations and obedience, yet he felt himself unequal to overcome their scruples to the site of St. Petersburg,—without enlisting on his side the prestige attending the name of one—who had lived so long before him, that he had actually to go up through the whole period of the history of Moskva, and into the indistinct Vladimir and Novgorod age beyond, to find the hero. So from the banks of the inland Volga, did he transport the remains of old St. Alexander to the new habitation preparing for him on the sea-mouth of the western Neva; and when the monks, disliking the cold and damp of the Finland morass, conveyed back again the sacred remains by night, and gave out that it was a miraculous return of the Saint himself to his Volga-side sanctuary, the great Peter, who could not afford to lose the advantage of such a mouzhik-compelling influence to his new metropolis scheme, not only brought the remains back once more, but let the monks know in very straightfor-

ward language, that he would hold them answerable for any more miraculous peregrinations of the reliquary bones.

In Peter's time, the Neva monastery of Alexander Nevski was of wood, the existing structure of stone and brick being chiefly the work of the great Catherine, whose reign it is eminently connected with. Here indeed are the tombs of some of those remarkable geniuses who so richly illustrated her Augustan period : Panine, Betskoi, Romanzov, and Suvorov. And here it was, in 1762, that the murdered body of Peter III. was exhibited for three days, dressed out in his anti-national German military costume ; the demonstration of death by strangling being considered preferable to any suspicion of a death not having taken place ; lest this should lead to false Peters arising, and heading successful rebellions. Yet were all the precautions, and the risk that was run, in vain ; for the Kosak *Pugatchev*, a few years afterwards (1773), announced that he was the long-lost Tsar, and between his own adherents and the Tsarina's, led to the destruction of three hundred and fifty thousand human beings.

To calmer scenes are the precincts now devoted ; for Alexander-Nevski Monastery has been raised from the class of smaller schools, to be one of the chief spiritual academies of the empire ; the Masters are invariably monks, and hence those numerous

thoughtful countenances, the very representatives of Eastern learning, we had noticed amongst the sable-robed choir on the left. Dr. Pinkerton, writing some forty-five years since, suggests that the monks, or masters, are rather too hard on the growing lads of scholars, obliging them to follow their own abstemious notions of diet ; and during the time that we were wandering amongst the birch-shaded walks of the gardens, with their triangular plots of turf, decorated in the centre with a tuft of acacias (*Robinia pseudacacia*), we did now and then observe a lank member of the black-clergy hasten past with scuffling gait, his long dress all flying loose about his heels though girt in at the waist, and showing that waist about the thickness of a deal plank—until it made us think feelingly of the Doctor's remark, and we trembled again for any youth whose meals should have to be doled out by such an excruciating shadow of a man.

The sky was dull-grey, and passing showers were frequent ; but taking advantage of a short cessation, we visited the two cemeteries attached to this monastery. Precious places of burial, for interment in which, high prices are paid by true Russians ; and yet, in spite of the high prices, they are both very nearly filled up already. Indeed the eastern enclosure is crowded in a manner rarely to be seen equalled ; and further exhibits so many of its tombs leaning

and inclining at most desperate angles from the vertical, as to give one the idea of its having inspired a certain painter's representation of the last day arrived amongst earthly things.

We had hardly noted thus much, when the rain descended in torrents, and we fled to the projecting ledge of a doorway; watching from there, amidst the heavy rain-strokes, the rank vegetation and the too flourishing crop of sad monuments; crosses, obelisks, urns, and weeping female figures. On the shower passing by, we emerged again, and penetrated amongst the tombs by the planken pathways, intended doubtless for seasons when the soil is mud indeed; and at last found one inscription we could decipher. It was in Latin, and told the usual, the invariable story; that he, an unknown and humble member of the community, had combined all the virtues and all the talents, all the morality and all the piety that could possibly illustrate human nature; a loving son, an exemplary husband, an affectionate father, an upright citizen, and a trusty friend; his loss—but which was to him no loss—was lamented by all who had been privileged to enjoy his acquaintance; both poor and rich alike bewailed him.

The larger proportion of the monuments were remarkable either in design or execution. A kneeling figure at the foot of the cross, or an anchor in the same position, was a favourite device; little

artificial caves, and a large block of stone cut carefully to resemble a rude rock and mounted on a polished base, were also frequent styles. Pictures framed and glazed were very generally let into the tombstones ; which sometimes took the form of small chapels of sufficient size to admit a mourner, and these were decorated with the usual plated picture of a saint with a lamp suspended in front of it. Granite, both grey and pink, and marbles of several colours, were the materials generally employed. In white marble there was one monument so large, so astonishingly beautiful as a work of sculptural art, with its innumerable carved decorations, and its surrounding moss basins of marble holding living flowers, that we carefully copied the Russian name ; and we did the same at another tomb, where, while the masonry was more simple, a sarcophagus-shaped mass of turf in front of it was strewn with a heavy sheet of recently gathered flowers, in a more gorgeous manner than we had ever before heard of ; they must have been cast upon it surely by unnumbered troops of loving friends, for there were bushels on bushels of flowers ; and each and every one of them were the most magnificent dahlias, or roses, or rhododendrons, or other showy, and for St. Petersburg, exotic blossoms, that could well be imagined, much less procured in such abundance even in rich horticultural circles. A few days after-

wards we showed the copied names to an elderly literary savant, expecting to be informed that they belonged to some leading noble families of the Russian state.

Did he know them?

"Yes! yes!" he knew them, was the answer, as he took a long pinch of snuff.

"Then who are they?" we eagerly inquired.

"Agh! agh!" said he, "money! money! nothing but money! One of them was a great speculator in tallow, who was almost bursting with riches; but the other was richer still, for he was a noted brandy-contractor under Government. However, it is well for him that he died when he did; for the tables are beginning to turn now. The mouzhiks all over the country are seeing the suicidal effects of their former drunken habits, and are spontaneously forming temperance societies. It's all amongst themselves and of themselves, that they do it, and they have got their own ways of carrying it out. They say they can't and won't give up brandy altogether; so they have set apart certain special days in the year, when they may indulge to their heart's content; but on all the others, they abstain most rigorously; so rigorously indeed, that the consumption of ardent spirits has decreased in some parts of the empire to the most surprising degree; and the profits of dealers in proportion. Govern-

ment does not object ; for it knows that the people must spend their money in something, and that if the excise on brandy yields less, the customs on tea, sugar, and manufactures will probably yield more. But with the contractors it is very different ; they have promised to pay Government so much a year, for so many years, to have the sole supply of spirits to certain circles of the country ; and lo ! the people are refusing to drink the said spirits, or any others either ; the monopoly, therefore, produces no profit to the contractors ; and meanwhile Government calls on them to pay up their premiums ; and they are very heavy I can assure you ! ”

Steering an oblique course by map, somewhat to the east-north-east, in our return from Alexander Nevski, we reached at last the “ Spas Bréobrèjenski Sobor,” Peter the Great’s Chapel for his favorite Bréobrèjenski guards. In our way, we had looked into several churches, but found no very distinguished features : the ikonostas with its central “ royal doors ” and the little side doors, were invariable ; also the slightly raised standing-space, enclosed in front, which constitutes the “ altar ” of the Russian Church. Byzantine plated pictures, too, were everywhere ; and what with the marked embossing of the metal drapery, and the metal tiaras round about the place of the head, and the notable

elevation often of the whole of this work above the painted face and hands below, you might now and then suspect some carved work there too ; but no, every close examination of the dark-brown visage of either Virgin or saint, showed flatness itself to reign there. In one of the churches, on a side wall, there was a collection of Italian oil-paintings undergoing transformation into Byzantine pictures, at a rate proportioned to the popularity of each particular saint and the wealth of the community. In one or two, the whole oil-painted surface was still intact ; but with the others you saw more or less of strips and surfaces of white and yellow metal laid on, until at last only face and hands were left untouched. Sometimes it was a garment, sometimes a gilt back-ground that first trenched on the original picture ; but more generally a coronet with projecting rays around the head, was prepared, and afforded at once the means of hanging up offerings, wherewith to carry on the Byzantining process still further.

On reaching Peter the Great's military chapel, there was distinctive character enough in it ; an enclosure around to begin with, and that enclosure constructed of trios of enormous captured cannon. Cannon mounted and cannon dismounted were at all the gates and all the doors ; and inside the chapel they blended with battleaxes, service-worn ensigns, and a golden ikonostas. It was a brilliant affair this,

Chapel of the Guards (the men whom M. Struve, p. 159, had taken as the type of tallness in the Russian army); gold had not been spared, and it was rather noticeable too, that imperial power in Peter's day had little else at command, as he lived in the early period of Siberian Russia; and it required his successors to develop and open up that wondrous region, by aid of modern scientific light, before malachite, lapis-lazuli, and rich rose-coloured marbles or jaspers could enter so largely into St. Petersburg church architecture, as they have done under the Tsar whose reign has just concluded.

A shrine-tomb appeared in one corner of the chapel, and near it an oaken chest with a glass lid and a military coat inside; and while we were contemplating this, a busy little scene got up in a sort of antechamber of the general building.

A priest soon manifested himself amongst the party by his garments, which on this occasion, were chiefly white cloth, and termed *phelonion* as to the body part, and *epimanikia* as to the sleeves. He was a pleasant-looking, honest, old gentleman, with not quite such large mustachios and beard, or such very long black hair as the generality of his brethren; but he seemed of rather a bustling nature and positive temperament, for he gave the people about him a great deal of his mind, before they had got preparations suitably made.

It was soon evident, by the brass caldron of a font filled with water and placed on a low stool, that an infant baptism was going to take place,—that important ceremony, in the practice of which there are considerable deviations amongst the several Christian Churches at present in existence.

Three lighted wax candles were here first stuck into the edge of the caldron, and then the several women carrying, in their right arms, bundles of white fluffy matter—from whence were occasionally emitted faint infantine squalls—had each a lighted candle placed in their left hand. These women were the godmothers, but where were the godfathers? A tall Bréobrèjenski guardsman who seemed to be acting as doorkeeper, received at this time some pretty sharp admonition, and therefore in double-quick time got himself a candle and fell in, in line, on the opposite side to the women, to act as godfather to all the babes at once. The parents are said never to be present on these occasions; for, as the baptism must take place on the eighth day after the birth, the mother is too ill to attend; and under such circumstances it is expected, that the husband is affectionately attending on his wife, and comforting her in the time of her weakness and prostration.

Matters being thus far organized, the priest took a burning censer, and “*incensed*” all round the font, and then with the assistance of a little book began

the service. As this was going on, many children from outside came prying in, and forming little gaping groups in front of the font ; there were boys from four to eight or nine years old, all rigged out in imitations of the military grey great-coats, reaching from their necks to their heels, and with a compressing strap in the small of the back, and all very respectfully with their caps in their hands ; there were some young girls also, in rather short dresses and shorter cloaks, with kerchiefs over their heads, who seemed to look on with extraordinary interest.

In due course, after the sanctifying of the water and the several perambulations, the sponsors had affirmed for the child that he would do his best to cleave to the good ; and then when it came to the renouncing of the bad, they all turned right round. Why was this ? Dr. Clarke* says, to show their aversion to the questions. But seeing that when they did so turn they then faced the west,—we may rather conclude that it illustrated† St. Jerome's words, "In our mysteries we renounce him who is in the west," or as Cyril of Jerusalem more particularly explains, "the west is the place of darkness, and Satan is darkness, and his strength is in darkness ; therefore ye symbolically look towards the west." Conversely, all the affirmations of good were

* Clarke's Travels, vol. i. p. 205, 4th edition.

† King's Greek Church, p. 190.

made looking towards the east, agreeably with that ancient Pagan notion, that the essence of God was light, and resided in the eastern part of the sky ; a belief which, on the decay of Paganism, was handed on traditionally to the Christian world ; and though now it is acknowledged by no sect in words, yet is it followed by almost all of them in practice, when placing either their churches or their graves,—and even themselves, in certain of their prayers.

The renunciation of evil, in the ceremony before us, is considered very important, for it is repeated three times, and after that the sponsors are desired “ *to blow and spit* ” upon that evil one of the west ; and they do so, and with a will. Affirmations of holding to the good are then repeated with faces to the east, and long prayers follow.

The length of these prayers seemed to tire out the children spectators, who left by twos and threes ; and we, only, beheld the final scene.

Out of one of the aforementioned fluffy bundles a young baby was produced, perfectly naked except a little white rag round its middle ; a red thing this baby was, with a long back like a whale, a bullet head, and struggling sticks of legs and arms ; after anointing the same, the priest took the creature up, as it lay face downwards, and with much skill, and we dare say kindness too, he supported its heavier members on either hand, while he began what

seemed to us a most cruel operation. Turning the child's head towards the east, he exclaimed, and then plunged the scarlet little eight-day-old right into the brazen font, head over ears. Then, after holding it up for a moment in the air, spluttering and kicking while he ejaculated another sentence, he plunged it in again ; and after other similar words once more repeated, he plunged it in a third time ; obediently with the doctrine of " trinary immersion."

From another bundle was extracted another deep-red, white-belted little baby, with all its limbs in motion like a young acrobat ; and it was likewise put through all the same immersions as the previous one ; whereupon we left the church, speculating on the physical mischief that must ensue to many a Russian infant on these trying occasions.

We had seen almost as much of new religious services in one day as we could well attempt to consider and reflect upon ; but observing something unusual about the doors of a very presentable church that lay just in our pathway home, we could not resist the inducement to look in. On entering, there was a tolerable collection of persons, and they were all, with the priests, in the centre of the floor, far from the ikonostas and altar, where only a small choir was stationed apart.

" Why ! it is a marriage," whispered my better-half into my ear ; and so it proved to be, and a pretty

tough one too, if you might judge from the exhausted look of the principals; the bridegroom especially was quite melancholy to behold; he was thin and pale, sunken under the eyes, with compressed lips, but determined apparently to go through with it to the end, even though he should drop.

There were many on-lookers here also, and grown people as well as children. Among the latter was a girl of thirteen or fourteen, with her little sister of three or four, and this creature was restive as well as tired under the infliction of the very long, continuous prayers; indeed she at last began to get noisy; and then one of the big priests, all a mass of cloth of gold and long curling ringlets, left his place at the centre to go and admonish her. The child was accordingly cowed for a considerable time; but after another long persistence in the prayers, she was inclined to become talkative again, for it was not in a little girl's nature to sit quiet and idle so long. A disturbance was evidently brewing, and was even now just ready to explode, when happily the elder sister hit on indulging another law of girlish nature, for she quickly whipped up the pretty elfin sinner in her arms, and carried her round to all the plated pictures, to kiss them; and kiss them the child then did, so lovingly and so long and with such zeal, and was so much in earnest, finding so much amusement in and making such a business of it, that plainly an effectual

safety valve for her energies had been discovered, and without again offending the fathers.

The good officiating priest was also in earnest in his line, and was not to be deterred by all those symptoms of dissatisfaction or weariness from going through his work thoroughly. So after having extracted from the bridegroom the confession that he did earnestly and honestly desire to marry this woman before him, he pressed him further with the sharply-pointed question:*

“Hast thou not promised any other woman?”

Answer: “I have not promised another, Reverend Sir.”

Next turning to the bride she is asked: “Hast thou a good will and firm intention to take unto thee for an husband this man whom thou seest here before thee?”

Answer: “I have, Reverend Sir.”

But then the question: “Hast thou not promised any other man?”

Answer: “I have not promised another, Reverend Sir.”

Upon which the deacon puts in, “Give the benediction, Sir.”

The priest gives it accordingly; and forthwith, in the service, speaks of the parties as man and wife: but they are not yet let off; no, no! there are still

* Dr. King's Greek Church.

long, long prayers. Then crowns, like traditional crowns of the kings of the East, all stellate rays and glittering yellow metal, are brought forward and placed on the heads of the bride and bridegroom, in token of the "triumph of continence," it is said, and in imitation of the antique Roman marriage rites;* and then follow more prayers. But these cannot last for ever, for see, the crowns are not placed *on* the heads of the happy pair, but are only held over them by the groomsmen, whose arms it is to be hoped are strong.

Then a cup of water is brought, and the priest after blessing it gives it to be sipped, first by the man, then by the woman, and then by the man again, until three pairs of sippings have been performed; then he takes both of them by the hand together, and draws them round and round three times in a small circle; while the groomsmen follow, with outstretched arms holding, or trying to hold, the crowns over the appointed heads.

* When, exactly, Matrimony was first made a religious ceremony in the Christian Church admits of some doubt; though, according to Dr. King, the first seven centuries at least most assuredly saw it more repudiated than encouraged to be considered as such. During that period, the celebration of marriages was left entirely to the civil magistrates; and when it was at length undertaken by the Church, which had previously employed its power to dignify the opposite state, many old features appear to have been retained, Greek, Roman, and Hebrew; and in tracing these, the extreme antiquity of the office in the Russian Church has been considered to be most important.

Then more prayers succeed, but shorter ones ; indeed, a sailor would say that soundings are touched at last and land in sight ; for the crowns are taken down and sent away—there is something uttered about the fruitful vine and the olive-branches round the table,—and then an extensive kissing begins, and universal rejoicings follow.

CHAPTER XVIII.

COMFORT AND DELIGHT.

August.

THAT excellent old pastor, the Clockmaker's spiritual guide, was a little startled, if we remember aright, at the unexpected vehemence of corroboration with which the dutiful Sam Slick answered a casual remark, to the effect of matrimony being the thing to tame a man. It was just about the most powerful means in the whole world, Mr. Sam considered. But there is something more powerful still, though of another order : and so may every one prove for themselves by attempting on a moderate income, to pay a long visit to St. Petersburg ; for truly, in the prices of that most imperial city, and the charges of the chief of her shopkeepers, there resides a degree of power sufficient to tame both a man and his wife, and enough to curtail all their projects, and effectually prevent them both, either from seeing much of,

or staying long in, this most expensive metropolis of the Tsars.

Something of that sort at least, we can attest, was daily threatening to be our fate ; seeing that we could hardly enter the door of any sort of establishment to satisfy the smallest want, without being victimized. We were already under the stinging remembrance of having paid for a wafer-like little guide-book of twenty-four pages, and a map of the city, as much as would have purchased a goodly tome in any other capital of Europe, when we applied in a moderate-looking shop for a mere shaving-brush,—for you cannot, even as a traveller, be independent of the razor in Russia without losing caste,—and they charged as much as if the bone handle had been solid silver.

Again, some one had told us on ship-board that photography was miserable and hardly known in St. Petersburg ; that was, nevertheless, a decided mistake, for there is scarcely a more frequent sign to be met with along all the principal streets, than *Фотография* ; and the specimens exhibited outside the *studios*, chiefly large-sized portraits, were among the finest things we have ever seen in that line ; but when we were in want of a mere glass dipper—and carefully eschewing the fashionable Nevski, wormed our way along a side street, until we saw a photographic material-shop in an upper story, and then

ascended with our request,—oh ! what a price they wanted ! It made us fly downstairs and determine to do without. Yet that method of cutting the Gordian knot, was of limited application ; my better-half required a renovation of her *chaussure* ; and at a fashionable *magasin* of that sort, a pair of those flimsy things, known to the English trade as “women’s shoes,” were shown her, with the price demanded, seven-and-a-half rubles (one ruble being three shillings). Some slight objection she expressed to paying so utterly out of proportion to the value of the article, but there was no escape. “Look you at this sewing !” said the French madame of the establishment ; “look you here !” cried she, sticking her fingers into the fore-part of the “cloth leathers ;” and then, with a sense of injury in her eye, and pressing outwards a seamed portion of the miserable stitching, she added, with a Gallic scream on her last syllable, “regard with your eyes this work *magnifique* ; *oh ! c’est magnifique !*”

The expenditures, which perhaps we least liked to tolerate, were the frequently recurring ones for meals ; we had now tried nearly all parts of the city, and for breakfast, dinner, and tea, it was always the same story ; everything was excessively dear and unsatisfactory. In the latter respect, indeed, we should make an exception in favour of a *café* in the Большая Морская ; where, by paying something

beyond a ruble for a franc, a pretty fair imitation of a medium *Palais-Royal* dinner was obtainable; *i.e.* like it in the quality of its viands; certainly not like in the openness and look of the scene; for, much as English ladies prefer to keep within their home circle, and Englishmen but seldom dine at hotels, those rightful British notions are carried to a higher degree still in Russia; and we cannot presume to quarrel with them for it. But in our particular case, some stop we felt must be put to the daily unmeasured outpouring from our purse, or our scheme of penetrating towards the secret fountains of Russian history must be given up.

How to manage it then? Why, the most likely method seemed to be, by learning first, how to solve another mystery much closer at hand, *viz.* how do all the wretchedly paid young officials, both civil and military, contrive to live? Excepting the very few who are cadets of noble houses, and can afford even greater extravagances than Peers' eldest sons in England, the rest—the great mass of them—we felt quite sure, could never afford to pay the prices we had been charged in public throughout all the “Admiralty quarters,” and even in the more retired region of the Vassili Ostrov. Though too all private working men in hotel neighbourhoods, especially telega-drivers, seem to do no stroke of work except for solid silver,—and according to information from

Pulkova, they have, by degrees, nearly quadrupled their prices in the twenty years that the Observatory has been established,—yet government pay does not seem to have improved; and some government servitors there are we were told of, who have no more than seven-and-sixpence a year to furnish forth all their pleasures during twelve long months.

Mystery, here, there evidently was; and we saw no harm in trying to probe it. So we began by degrees, purchasing provisions for ourselves, to dispose of in our own rooms at the hotel, which is indeed the true Russian practice. About bread there was no difficulty; for every few doors along any street, were the golden lover's-knots, and pictured forms of loaves of varied shape, that indicated a baker's shop; while a Cupid descending from the sky was seen turning inside out a parti-coloured cornucopia, full of ornamental rolls of every conceivable description. There was often a little trouble in entering such baker's shops, for the jealously closed double-doors of winter time, were generally still in place; and I had to pull away with both hands at one door, to keep it from slamming-to on my companion, before she had safely got through the other equally obstinate portal. Once happily entered, we invariably found the painted programme outside, excellently realized within, in all manner of little ornamental shapes of bread, as admirable in

quality of flour, as superfine in their raising and baking, besides being very cheap. We had some doubt whether a kopeik St. Petersburg bun was bigger than a penny bun at home, but had none of its being better tasted. Nevertheless, we did not confine ourselves to these ; rather trying a different shape and appearance of bread every time, and never finding that by going further we fared badly. Yet the chief curiosity was, to see the style of persons who likewise came and carried away their own supplies ; for there were very many well-dressed individuals after the West European manner ; and we would occasionally have vowed, that some venerable-looking old gentleman who walked off with a large brown-paper bag, full of neat little loaves about an inch cube, and others of a ring-shape, and others of a figure of eight, and others of an oblong form and stratified structure like the flakes of a good cod-fish,—must have been a Councillor of State at least, and that would place him in the fifth class, and allow him to rank with Brigadiers and Commodores.

No persons at all, however, in St. Petersburg, not even the hosts of unknown bearded men, the real legions of Russia, who move in the deep waters below the thirteenth class, are without supplies of splendid bread, the equal of which is rarely to be found in any baker's shop in our own country. At least we would venture to speak thus, from looking at

the numerous portable bread-stalls at the corners of many of the St. Petersburg streets ; and more particularly near the bridges, where open-air breakfast establishments for working men, seemed to be constantly maintained. Hot tea, was also there ready for them, as well as cold *kvas* ; and chief favourite of the whole, the most, to us, disagreeable-looking pickled cucumbers ; almost globular in figure, like poisonous gourds, and two to three inches in diameter. Shuddering, we fled from them, and entered a wine-shop, *i.e.* an office, wine merchant's if you like, for the sale only of wine in a neat, clean room, perfectly free from cobwebs and straw, and looking something between a druggist's and a book-seller's ; the whole of the walls being occupied with shelves or pigeon-holes, filled with bottles ; but each of them lying on its side, and neatly wrapped up in white paper. It was very short work here, for a long printed list of wines being handed us, we ran our finger down the names, and on bringing it to a stand at " White Port," seventy-five kopeïks per quart, the man's practised eye glanced along his shelves, and his hand pounced unerringly on a bottle ready wrapped up and with a printed label showing precisely that same name and price. They were evidently accustomed in these shops to a single bottle of wine being asked for, and carried off by a class of persons who liked it made up in a neat parcel ; and in fact,

almost all their business seemed to be on that footing. On subsequent trial being made of our purchase, we agreed that seventy-five kopeiks spent in this manner, had procured as much as three rubles two days before at a restaurant. This immediate success, however, was rather dangerous, for our next step, viz. in purchasing milk, without previous inquiry, at a provision-shop,—where it was handed to us out of an ice-safe, by a sleek-bearded, smirking, and rather westernized man,—proved something of a failure in point of economy. We succeeded, though, the next day, in finding another milk-shop, much closer to the hotel, in the Gorskhovaya Street, or that leading straight from the Admiralty Tower into the heart of the city, and within a few doors of our own street on the right hand, and when we brought home from thence, a whole bottle-full for half the number of kopeiks that a third part of a bottle had been given to us the day before, we doubted whether it could be good milk. But on being poured out, it proved itself excellent, both in sweetness and density ; and then we began to have a gleaming notion of how cheaply those may live in Russia, who confine themselves to Russian produce, and know how and where to purchase it. Rejoicing in the honesty thus discovered, we rushed back to the same shop for our next purchase, and the two boys in charge almost fell down in ecstasies of

laughter, first at our pronunciation of the general word for candles, and then at our testing the particular quality by mineralogical pressure with the nail; but when they had done laughing, they set all the varieties of longs and shorts on the counter, wrote down the prices of each in kopeiks, and then took their calculating-machine with its beads strung on brass wires, and therewith totted up the sum of our several purchases with great speed and perfect accuracy. A single article was declined, and then it was pretty to see how neatly they abstracted the number of beads representing its price from the series representing our whole purchase, and left outstanding the rows and parts of a row we had still to pay.

The Russians evidently have an excellent receipt for making candles; of stearine, apparently, prepared from the tallow so abundantly grown on their steppes; for the candles are white as snow, and almost as hard as alabaster, self-snuffing, free from smell, and so cheap, that we could sit in the evening in a flood of light, and stop that devouring item in the landlord's bills, yclept, the "bougies."

All this was but a beginning; for to what point had any one's commissariat arrangements reached, unless they could prepare a cup of hot tea, and in the Russian style? We had already decided, on witnessing at Pulkova the superior efficiency of the

“samovar,” or self-boiling urn, that we were to purchase one before leaving Russia, for the purpose of taking home with us ; so now the question arose, why not purchase it at once, and begin to use it, and reap advantage from its use in Russia, as well as at home ? Why not, indeed ? except that we were now trying to live economically, rather than like careless spendthrift travellers, and were bound in honour not to commit any great pecuniary mistake ; and here was a something to be bought, which must cost a large sum at any rate ; and who can tell precisely, without any previous experience, what is the best size, shape, and arrangement of a “samovar” ?

It is true that it may be described merely as a hot water urn ; but when we mention that the boiling is kept up by a charcoal fire, we have indicated that the heat is derived from a source, which an able Englishman has described, as “a fuel whose use is understood everywhere except in Great Britain.” On the Continent, all nations would therefore be found pretty expert in handling the material to be burnt ; but with a curious distinction in the manner of burning it. In Western Europe, for instance, the popular mind invariably places the fire in one vessel, as a chafing-dish ; and the water in another, as a kettle ; and their brass kettles and brass chafing-dishes, were some of the most cherished household treasures that Dutch colonists, in Holland’s days of activity, carried

to their new homes in three distant quarters of the world ; and where, when once the good Vrouw was established in her chair beside a little table, on which her bright polished brass kettle was kept perpetually simmering over the embers in the chafing-dish, and she could thence offer a cup of tea to her lord and master at any hour of the day, she was both happy and contented. Cross over next to the East of Europe, and you see kettles and chafing-dishes no more : but in place thereof, a universally employed arrangement, wherein fire-place and water-vessel are always one and indivisible,—and it is constructed something as follows. In an urn-shaped vessel which holds the water, and right through the water, a vertical tube, two and a half or three inches in diameter, open above and below, is passed ; an internal ash-grating being then dropped down nearly to the lower end of this tube, a charcoal fire is made there upon it, *i.e.* in the tube and surrounded by water on every side except at the top and bottom, where the tube maintains an open passage ; below, for the indraught of air to the fire ; and above, for its chimney escape therefrom. This method, much like a vertical tubulated steam-boiler of the present day, is so admirably adapted to economize fuel, that it rapidly brings up water to the boil ; and then by judicious damping, will keep it there for a long time ; and the remarkable thing is, that everywhere

in Russia, among all classes, from noble to peasant, and whether they are at home or on the road, you see this same "samovar," their closest companion, seldom deviating from an original standard shape ; and always testifying in its oneness of character against the duality of the Western arrangement of separate kettle and fire-place. A recent German author, we have not heard what Russians say of him, has claimed the "samovar" as an invention of one of his countrymen ; but fully allows that it has been taken up in Russia to a vastly more popular extent than it ever was in his own country ; so that now, whether you visit the forests of Archangel, the Pontine Steppes, or the plains of Siberia, you find it, the "samovar," endued with all the symptoms of being indigenous to the soil, and traditional in the Slavonic family.

New arrivals then, and British, were not very likely to make a good hand at choosing one of the Russian urns, and we considered ourselves therefore most fortunate in obtaining some skilled assistance. Close by, in the Bolshoi Morskaya, at its junction with the Izak Place, lived an expert chronometer-maker employed in his line at the Central Observatory ; and after an official introduction from that quarter, his wife, an Englishwoman, kindly volunteered to educate mine in everything belonging to a "samovar," beginning with the purchase thereof.

So away we went at five o'clock in the evening under this experienced guidance, not to any ordinary imitation of a London or Paris shop, but to the truly Russian collection of native shops and stalls, forming the Gostinoi Dvor.

This extensive bazaar we had passed one Sunday evening, in trudging along Nevski Prospekt, but then its long rows of arcades were quiet enough, and every door was both closed and also secured, some with a padlock, but more by a seal of the same soft wax employed by the Customs officials; so soft, yet giving more security in this country than triple chains and iron bolts, because considered to be under the special protection of St. Nicholas, and he is esteemed by many as being the tutelar Saint of Russia.* Now, on a weekday, we entered by some of the smaller streets to the north-west, and were instantly surrounded by the busy crowds and attacked by vociferous applications from loud-lunged boys to patronize their respective masters' collections.

Past these we pushed, past the rows of iron-nail shops, past all the file shops, past the men bowing and crossing to the saints' gorgeous pictures with lighted candles before them, hung up at every few yards' distance, and through all the flocks of tame pigeons pecking about on the ground under the feet

* There are no less than 118 churches and chapels dedicated to St. Nicholas in Moskva alone.—*Dr. Lyall's Moskva*, p. 200.

of both horses and passengers, and presently arrived at the dealers in copper and brass ware. The small dark shop we first entered was well stored, and the long-robed, hairy-faced owner of it brought down from his shelves samovar after samovar, and was not in any degree dissatisfied when we left him without purchasing, and went into his very next-door neighbour's to look at his collection of precisely the same articles ; and so it was with him when we went into the next and the next ; each man seemed perfectly satisfied when he had exhibited his goods, to wait a future result, and ceased, both in his own person and that of his criers, to trouble us with further importunities.

In the course of half an hour thus spent, we became extraordinarily learned in "samovars," recognizing that for their material—brass is the most usual, and the cheapest ; copper the next less, and bell-metal third : silver ones may be had, and if I were a Russian noble, I would have one in platinum. Then for their form, we decidedly approved of the old original, the country samovar,—a fine, full, Grecian vase, with sufficient height to give plenty of draught to the chimney of the internal fire, and sufficient width in the annular water-space, between the central fire-tube and the outside of the vase, to allow a hand to be introduced for cleaning it ; and generally remarkable for its well arranged proportions to hold the greatest quan-

tity of liquid with most internal heating and least external radiating surface, as well as for deep design in making what appears to be only ornament, an opportunity for causing a small amount of material to go further than it otherwise would have done, in giving strength and stiffness. Lamentably were all these points neglected in the squat, or slender, or bulbous, and generally diseased-looking forms which the demands of fashion and luxury had lately been introducing, chiefly in the bell-metal varieties ; so we proceeded to make our selection among the brass.*

The best *ansation* was a matter of doubt. Should the handles be vertical or horizontal, folding or fixed ? That we did not care about so much as the draught for the furnace ; and we had nearly decided on an apparatus where the air entered at the very bottom of the tube, under the pedestal of the urn, and therefore gave greater vertical height than any other modification,—when we were warned that that plan lets hot ashes sometimes fall on the table-cloth, and it never has the cheerful look of the other variety, where the air-holes are in the sides of the tube, above the pedestal ; for then, if the internal fire

* Since writing the above, we have had it positively asserted to us, and dinned into our ears, that all the Russian samovars are made in Birmingham ; and our informant had visited an establishment where they turn out a thousand per month. This accounts, not impossibly, for the chief of the bell-metal monstrosities.

burns brilliantly, its ruddy light comes streaming charmingly through all those little holes. Indeed, this is what makes the children clap their hands with delight on a dark evening, or an equally dark and cold morning in a Russian winter ; and if there is a mischievous boy amongst them, he gets hold of the spare length of additional chimney, trumpet-shaped by the way at the top exactly like our locomotives' chimneys, and clapping it on the summit of the samovar when his mother has left the room, he gets up such a roaring draught that the fire brightens up in a trice, until there is quite a cart-wheel figure of fiery glow coming out on the table-cloth through the said little holes, and showers of crackling sparks go flying up to the ceiling, and gushing jets of steam shoot out horizontally in every direction from under the cover of the urn, and make quite a merry cloud round about. So then the littler ones clap their hands again, and roll off their chairs with delight, while the mother or the elder sister comes running back to scold the naughty boy, to put on the damper, and pour in a supply of cold water through a little hole in the lid of the "samovar" by means of a funnel duly contrived for the purpose.

"That samovar," said Mrs. Pihl, "the merchant asks twenty rubles for, but he will probably let it go for fifteen."

"Then why does he not ask that price at first?"

“Oh, that is not the way here,” was the answer; “it is never expected that the price first stated is the one which either the selling party will receive, or the other party pay; look now at that case transacting on the other side of the shop.”

We looked accordingly; and there were a young lady and gentleman (French, Swiss, or German, rather than Russian), and seeming just to have commenced housekeeping together; so of course, one of their first requisites was a samovar, and the lady had fixed on one of the dreadfully fashionable ones, of squat figure and wasp-waist, which the shopman had declared to be “a chaste pattern” and “perfectly new;” and then came the tug of war as to its price. The man charged, he said, what would just leave him next to no profit at all, and the other party shouted in derision at the gross impudence of his unconscionable demand; and then, at it they went, hammer and tongs. The shopkeeper protested with both hands, and pulled his hair, and called on his saints; but the lady’s ire waxed furious, her blue eyes swelled, her face became crimson both with agitation and screaming; at last she would not remain any longer in such a shop, and marched her husband away with her, after giving from the doorway a last Parthian word, which the salesman received with abject demonstrations of infantine innocence and honourable martyrdom, and then she disappeared

round the corner with her more peaceable half. Whereupon the stricken lamb of a shopkeeper went out following them, and shortly after they all three came back and had another wrangle; but just at the instant when it seemed on the point of a more terrible explosion than before,—lo ! it all ended as quietly as possible; and the young housekeepers became possessed of as ugly and inefficient a samovar as they could well have found through all Russia.

Then came our turn, but Mrs. Pihl's truly lady-like manner relieved it of all its horrors; without raising her voice, or embittering its tone, she quietly, yet firmly told the man what she was prepared to give; and found, after he had had a minute or so to reflect upon it, that he was quite agreeable thereto. So straightway our purchase was packed up and confided to a boy in a long dressing-gown and topboots, who was to follow faithfully at our heels, and to whatever other shops we might visit, until we should arrive at our hotel.

A beautiful little Russian teapot, of white china, for something like elevenpence (they eschew metal teapots on account of the chemical action of the tea upon them, and with the samovar close by, they have no need of a polished silver surface to keep in the heat), and two Russian glass tumblers, in place of porcelain cups, completed that day's purchase.

Returning, however, the next afternoon, we wan-

dered by ourselves, not only all through the Gostinoi Dvor, but through the reputed ill-mannered regions of the *Shtchukin Dvor* and the *Apraxin Rynok*, markets for coarser goods, and resisted all the pressing entreaties to purchase old furniture in one part, or in another supplies of honey and pickled mushrooms. The latter, kept often in huge glass jars, sometimes in immense barrels, while rather revolting to look at, are most worthy of a moment's attention. How we had rejoiced, while staying at certain houses here, whenever mushrooms were introduced at dinner; they were food fit for an emperor, and were served out without stint. In England the mere mention of mushrooms brings up the idea of a wealthy gourmand making researches in theoretical gastronomy to please an over-indulged palate; but in Russia, while equally good, they are in such prodigious quantities as to form a great part of the food of the whole people. And a most important part, for here is one of the quickest-growing of all vegetables,—some species rise out of the ground one day, increase, come to perfection, and again decay and disappear before the next day has arrived,—and yet, if plucked at the right instant, there is in it a mass of firmer and more meat-like food than any plant of the whole kitchen-garden can show.

“Whoso draweth a fish out of the sea, draweth a bar of silver, reaping a harvest which he never had

the trouble of sowing," says an old author, anxious to see his countrymen attending more to the fisheries on their coasts ; and similarly, what shall we say of the harvest of mushrooms, which a child may gather, and which, though no man sowed them, yet they spring up year after year over all the breadth of the land. An accurate return of the total quantity of these plants annually consumed in Russia would be a startling and important document, but is not likely to be procured, for the greater part is eaten by the same peasants who gather them, and who, besides feasting on them all through the season, pickle, salt, and dry them on strings against the winter period ; when fried with a little hemp oil, and eaten with rye bread, they supply well the place of animal food ; but if, with a little more art they be fried in sunflower oil, then there are some "mushroom cutlets" which look and taste very much like the same preparation of chicken. William Coxe, in his 'Russian Travels' of nearly a century since, remarks on "mushrooms being so plentiful in those regions as to form a very essential part of the peasantry's provisions. I seldom," says he, "entered a cottage without seeing great abundance of them, and in passing through the markets I was often astonished at the prodigious quantity exposed for sale ; their variety was no less remarkable than their number ; they were of many colours, amongst which I parti-

cularly noticed white, black, brown, yellow, green, and pink." As to what amount the "prodigious quantity" at the markets may represent, reports are very indistinct, but Lyall,* who is not liable to exaggerate such matters, sets down, about the year 1817, "besides thousands of baskets-full, some thousands of telegas-full (small carts), as being annually sold in the city of Moskva alone." And he further points out that the acquisition of this most notable stock of nutritive human food depends, not on Russia being richer in species of agarics than Great Britain, for it is the contrary,—but in the extraordinary skill of Russian peasants in knowing how, when, and where, to look for them, how to distinguish the edible from the non-edible, and how to cook them when procured. This skill is a something handed down traditionally from parent to child; and if it could be written in words, would prove a valuable addition to what scientific botanists yet know in the matter; for many mushrooms never ventured on in this country are daily used by all classes in Russia, and others which are really so bad that they cannot be eaten, and some actually poisonous, are yet occasionally employed to profit in furnishing an aromatic alcohol. Oh! ye British distillers of grain, who are persecuted by teetotal societies for annually destroy-

* Lyall's 'Character of the Russians,' p. 558.

ing so much food of the people, behold what a door of escape is opened by the family of the fungi !

Our present purpose is with another aromatic vegetable—tea ; and the very pictures of Chinamen on the shutters of St. Petersburg tea-shops, show that Russians deal with a northern and better-looking race than our old friends of Canton. Inside, the shop affects to exhibit a large number of recently-arrived boxes, all still sewed up in their overland sheepskin coverings, and when we ask for a pound of tea, we are politely shown a great printed sheet in Russian, called the tea price-current, wherein are hosts of most unreadable names, and incredible numbers of rubles after them, rising we believe at the very end to one hundred rubles per pound ! On pointing out a modest three-rouble price at the beginning of the table, a packet already made up and labelled of precisely that tea, was handed to us ; and Mrs. Pihl having with great kindness already instructed my wife in lighting up the samovar, and sent over, after preparation on her own hearth, a quantity of soft wood-ash which inflames more easily than hard charcoal,—we got up a splendid hot repast in our own rooms ; and there voted that Russian tea, while dearer than English, is brighter coloured, more ethereal in flavour, and goes further, weight for weight, besides being remarkably well tasted out of a glass tumbler.

Breakfast operations were hardly concluded the next morning, before we had the pleasure of a visit from M. Otto Struve. He was in great force, and no wonder, when in the first place he had to relate how prosperously the scheme of mountain-astronomy in the South of Russia was going on. The Emperor had at once approved of the principle of the project, so far as contained in a memorial laid before him, and had sent for General Chodzko to hear more by word of mouth. The General had accordingly travelled up to Peterhov, been received in a long private audience, and finally empowered to return to Teflis and commence civil arrangements, while M. Struve and his colleagues, in conjunction with the Minister of Finance, prepared for the scientific service of the new Observatory.

In the second place, M. Otto Struve's eyes beamed with filial love as he told us that on that day his revered father was to return to St. Petersburg. The veteran's absence had been nearly a year; might be said in a way to have actually been a year, seeing that in local phraseology he had left on the 30th of August, Old Style, 1858, and was to return on this day, 30th of August, New Style, 1859.

"And when might we hope for the honour of an introduction, and an opportunity of testifying our respect for so notable a head in science?"

"To-day," was instantly answered; "come and

meet him as he lands from the steamer on the English Quay. Don't be afraid of intruding at a family scene ; it won't be anything of the sort in the open street. You can let some days pass, if you like, before coming out to Pulkova again, but, much rather than not, make your appearance on the quay in time for the steamer at one o'clock."

So, in anxiety to be punctual for the friendly opportunity thus afforded of seeing Russia's greatest astronomer, we hastened off full three-quarters of an hour before the time, dreadfully afraid lest the fine weather might have enabled the steamer to come in too soon, and make us too late. There were evidently steam-ships of some sort blowing off their clouds of white feathery vapour alongside the western end of the English Quay, and oh ! adverse fate ! could the packet from Stettin be amongst them ? Impossible, so long before the appointed moment ; and yet there is one chimney that looms very large, so we hasten along feverishly, and look wildly at every close carriage that passes, lest it is carrying off the precious prize and goal of our present ambition. Half the distance is accomplished, and thus far we are certain that no Struve party has passed us in the street along the riverside ; but then, suppose that their carriage drove at once up into the parallel Галерная Улица ; oh ! the thought of that is utterly disquieting ; we cannot be in the two

streets at once, so we push on, and push on, and arrive at last breathless amongst a large crowd, and then learn that the Stettin steamer has arrived at Cronstadt safe enough, but will not be here for three hours still.

And what is keeping her? She ought in this light westerly wind, to have made a very quick passage from the Prussian coast.

“So she has,” said an ancient officer; “but she is so full of passengers, and they all have passports to be looked over, and each man must be interrogated singly, he must have his eyes, his nose, his mouth, his hair, all compared with the description on the paper, and then comes the question, ‘What has he come to Russia for?’ ‘*Pour s’amuser.*’ ‘Oh, no!’ say the authorities, ‘that won’t do a second time;’ and then the one traveller who is under the question, expostulates, and the other two hundred and ninety-nine are kept waiting. Alas! alas!” muttered the old man, “what benefit has our country derived from France, that we should now be copying her passport system, and introducing all its little plaguing minutiae?”

Of course we did not know, and did not pretend we did; but finding so much time to spare, took a turn in the town, accomplished some business, and came again in a couple of hours. The crowd had then increased, and we found our friend M.

Otto Struve and his family arrived on the ground. Several other astronomers were also present, including Professor Savitch, of St. Petersburg, and M. Schwartz, recently returned from an exploratory journey through the eastern regions of Siberia.

The number of spectators continually increased, and on the confines of this dense multitude carriages of various sorts were every moment arriving. Then the police began to open up a cross passage in the very midst, and marked it off by stretched cords, extending from the landing-stairs to the office across the street; and after that, the officials, who paced solemnly between these portable "long walls," became the observed of all observers. Presently there was an excitement, the steamer was seen entering the mouth of the river. Oh! there she comes; a goodly craft, so nobly cleaving the water before her, and how full of passengers! Then follows a stirring time, when the fine vessel having come nearly abreast of the landing-place, is backing and forwarding, and snorting alternately louder than ten giants, as she is being sidled up, and the crowd on shore are pressing and squeezing each other unmercifully, in order to have an early forbidden view of their friends on board.

But when the ship is at last fairly secured alongside the granite quay, and the long wall of rope

carried to her very side, there is solemn silence, and momentary rest ; for now we shall see, what shall immediately be, and expectation is on tip-toe. Hah ! there is a little waving motion in the crowd that tells of some one having actually stepped on shore ; so all around us stretch out their necks, and turn their heads to see who it is.

A stout-built officer, with an erect air and an immense swagger, like a martinet colonel of light dragoons, is seen. He has some remarkable portfolios under one arm, and stalks along as though he bore the souls of men with him too ; yet he graciously recognizes two or three faces in the living lane through which he passes ; and even condescends to bend out of his direct line here and there, and imprint a delicate kiss on the cheek of some man as tall and burly as himself.

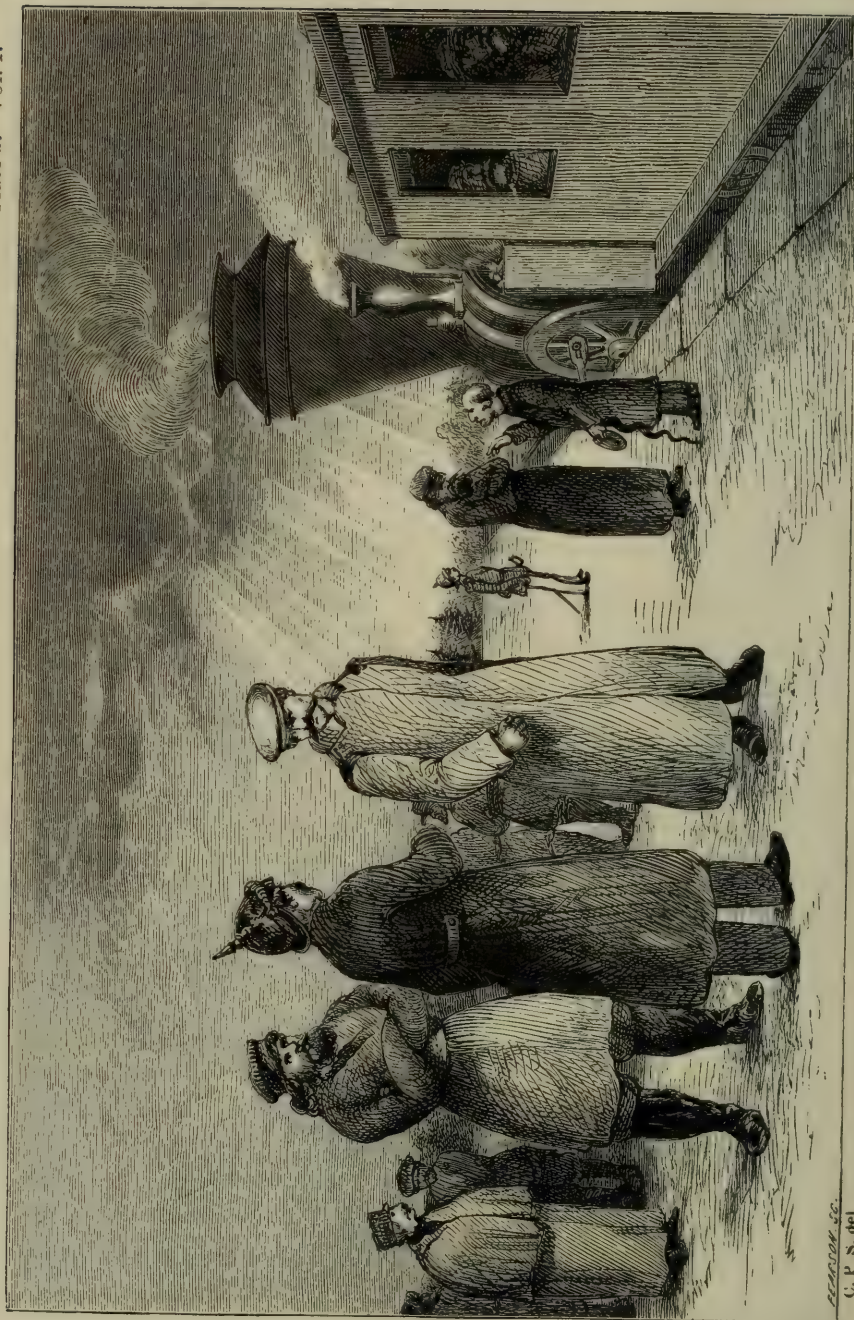
So he passes on to the office, and there disappears ; a murmur of approval follows him, and greater pressure from behind tells us that all the crowd want to know who comes next. There is a well-marked pause in the exits and entrances ; but then comes a file of men bearing the mail-bags ; and when they also have gone on their ways to the office, the excitement of curiosity or of yearnings long pent-up, can scarcely be restrained ; some persons think they can see the tops of their friends' hats, and one big man almost climbed on our shoul-

ders to look further than his fellows, and then began to shout out at the top of his voice, "Die Mutter ! die Mutter !" and showed all the by-standers where he recognized his mother by the summit of her white parasol. He had not to wait much longer, for now the flood-gate of passengers was opened, and though the first dozen or so who poured along were commercial and military-looking gentlemen, who in spite of their haste in their business or profession, often blocked up the road by stopping to hug and kiss some of those who formed its side walls, yet the usual heterogeneous mixture of ladies and gentlemen in a steamer's cabin-complement, soon followed ; and then, oh ! powers of mercy—what furious kissing ensued. Men became wild with excitement, and threw their arms about each other's necks, or rushed at each other like couples of bull-dogs, and held on for a minute at a time, only with their lips, not their teeth. Some gentlemen embraced closely, and utterly regardless that they had knocked off each other's hats, went kissing away first on the one side of the face, and then on the other ; while others seemed to be remorselessly devouring all at one place. Some again had the appearance of being engaged in biting out little bits all over the opposed countenances ; and a few performed stage-like scenes, of throwing their heads over each other's shoulders for awhile, then raising them, looking each other in the

face for one short moment, and at the next, amalgamating their visages together in one inseparable lump. There were some remarkable scenes, too, between ladies and gentlemen in the crowd, though we most admired the moral control of that lady, who had come in an open phaeton, and with compressed mental energy restrained herself until her expected old gentleman had been fairly pushed up, and had seated himself in the carriage—and then she threw herself bodily upon him.

After awhile, these excesses of welcome to relations and friends returned from a Continental tour began to subside, the densest mass of the passengers had passed, and then it was announced to us, there is William von Struve with his family, and we saw a noble old man, of Scandinavian lineaments, with traces of the manly constitution of his youth eminent still, and a kindly blue eye that looked firm and true. Affectionate was the greeting that followed between the father and his long separated children, in the number of whom, after a manner, all the other Russian astronomers seemed to desire to consider themselves and be considered. His reception of them all was dignified as well as genial, and before he drove off with them, to return to the loved abode of his labours, we had the honour also of receiving from him a friendly welcome, and in excellent English.

Nothing now remained, but to prepare for our journey next day to Moskva, intending there to abide, until the interesting and instructive establishment at Pulkova should once more re-open to strangers under the auspices of its ancient chief.



HEATON SC.
C. P. S. del.

SCENE AT THE MSTAVA RAILWAY STATION.

THREE CITIES IN RUSSIA.



PART II.

M O S K V A.

“ No country has a more eventful history, or one so replete with romantic episodes, few of which are known to the Western world.”—
Six Years' Travels in Russia, by AN ENGLISH LADY : 1859.

PART II. MOSKVA.

CHAPTER I.

PENETRATING A CONTINENT.

August 31, September 1.

HAVING paid a preliminary visit to the Moskva railway station in St. Petersburg, and found its bills printed in Russian only, and the officials speaking nothing but that language, we decided, though hoping that at train-times some greater linguists might appear amongst them, to secure a fair start on a first journey, by getting some little assistance from the old "garçon" at the hotel.

The morning, moreover, was showery; so instead of the one, two, or three little droshkies with which we might otherwise have started, the garçon went out to fetch a close carriage; and presently returned with a splendid one, drawn by two noble-looking horses, but with their tails and manes drawn up into such tight, hard knots, as to make one fear the poor animals must feel their very eyelids in a state of

tension. Our vehicle, in this respect, was not singular; for the day was something more than threatening, the roads were muddy, and as we drove up the Nevski Prospekt, every other horse that passed was similarly triced up; or, if at any point among the collection of standing droshkies, there was one steed not yet titivated like his fellows, there was the Isvostshik already hard at work, pulling and twisting and knotting at the horse-hair with a degree of energy that would have made any other equally vigorous and fine-limbed horse, unless he was endued at the same time with the temper of a lamb, kick out viciously both before and behind.

On arriving at the station, the first thing to be accomplished, proved to be, booking the luggage, paying for it by weight, and giving kopeiks to the soldier who had carried it in; the second was, taking out our own tickets, and they were long strips of paper with every station name printed thereon; a "douceur" and "au revoir" to the "garçon;" and then common cause with other intending passengers, already accumulated in the usual style of a Continental railway anteroom.

A few minutes before twelve o'clock, the further doors were thrown open; and we proceeded along a station in English fashion, seeking for a Moskva second-class carriage. There were plenty of them, each upwards of thirty feet in length; admirably

furnished with double sets of short, transverse, well-cushioned seats ; and a pathway running down the middle to the entrance and exit doors at either end ; a famous plan, which enables you, even when the train is in motion, to move along from carriage to carriage and perhaps choose one with more vacant space than your own. There was no trouble on that score at present, for we each got a whole seat like a short sofa to ourselves, and so did every other person who had entered ; but what an amount of baggage they brought in with them !—regular bedding, and therewith some of them began to make their couches as cosy as possible.

It was to be a night journey then ; and indeed could hardly be otherwise, starting as we were doing at noon, with little less than five hundred miles to perform before reaching Moskva. This journey therefore, for distance, we may take as very like, though somewhat greater than, that from Edinburgh to London ; though, as to latitude, it must be considered to be situated just on the other or northern side of the Scottish capital to what the London journey is ; for, while Moskva, to which we are going, in $55^{\circ} 45'$ N. lat., may be taken as nearly identical in latitude with the modern Athens,—St. Petersburg, from which we are starting, in $59^{\circ} 56'$ N. lat., lies under the same parallel as Sumburgh Head in the Shetlands.

Starting then thus on a journey from St. Petersburg to Moskva, or, to use their latitude equivalents in Britain, from the Shetland Islands to Edinburgh; we are dealing throughout the run with high northern positions. Even Stockholm is by no means so far north, as our Russian point of departure; and only Christiania, of all the capitals of Europe, with its Norwegian atmosphere comes near it; while, as to the spot we are making for, or Moskva, though it lies comparatively somewhat to the south, yet it is so much to the east also, that the effect due to a small change of latitude, may perhaps be found entirely overborne by another power capable of altering climate, viz. the continental; for it is to be observed, that every mile of the road after leaving St. Petersburg, has the effect of carrying the traveller right into the heart of a mighty, undivided continent. Hence the occasion will be as good a one, as the whole world can afford within a similar distance in miles, for arriving at the characteristics of continental, as opposed to insular, climate.

A certain degree of the former effect we had already begun to perceive, even in St. Petersburg itself, touching, though that city does, on a continuation from Western waters; and hence, though we may get much instruction by comparing Moskva with St. Petersburg, we shall obtain more, and eliminate latitude too, by carrying on a double comparison; like those

powerful operations of manufacturing chemists, when they can get up a double decomposition ; or, in our case, by contrasting St. Petersburg with Shetland, and Moskva with Edinburgh.

Now here we might bring forward a mass of figures, derived from instrumental observation, to prove the point ; but prefer to leave those comparatively dry and mere gauge points of the whole phenomenon, until we have obtained some broad human testimony, proving a really important case to be inquired into. Nor will the mere feelings of any observant person fail to set them right herein, even should they have arrived in Russia fully believing in the old geographical idea, of latitude indicating climate, and climate latitude, to a minute degree of precision.

To begin then, with what natives of Scotland should know something of ; viz. the climate of her northern group of islands ; only think for a moment of the continual clouds on Fitful Head, or the storm-swept Sumburgh Head, and the weeping Isle of Mousa, and yet they are exactly under St. Petersburg's parallel of latitude. Why positively and in simple truth, when a lady friend and her husband returned, some years since, from a two months' summer tour in the Shetlands, a midsummer tour as near as it could be, and both her face and hands were deeply embrowned ; " Oh no," replied

she, "that was not sunburning; it was the effect of sea-wind; as for the sun, she had never seen that luminary once during the whole eight weeks they had spent in Zetland; there the scene had always been a perfectly grey sky, of misty, driving clouds, of clouds following clouds, and a moaning wind; with constant lashing of the waves on black pointed rocks, that projected forth from the angry waters like the fingers of a dead and drowned land, uttering warnings of its fate; and if there were any other objects visible, they were seabirds wheeling in the air, and then dashing far off from the four-oared boat, that was the mail-coach of the region; or from the road, the only sort of road for these parts, viz. one where a boat can lay at anchor."

A veritable *Ultima Thule* of impossible improvement even the Shetland Mainland appeared to ourselves on a similar visit, for in that climate, not a stick, not a bush with wood in its stems, was to be seen, only wet grass and mournful moss; and the inhabitants showed us on one occasion, by the twilight of eleven o'clock at night, the very identical gorge, down which an Oxford student in despair had plunged only a year before. Cautiously we crept over the small stones and short turf to the edge of the cliff, and gazed down the frightful, sea-opening abyss, with sides of vertical blackened shale. Glistening rock-surfaces here and there, told

of escaping springs of water, but no blade of vegetation accompanied them; and more than halfway down the dizzy depth, there were some mere white points floating about; which the light-keeper said were sea-birds in mid-air; and below, far below them, the base of the cliffs went sheer down into the deep, dark-green sea-water; dark even to blackness in the further recesses of the fissure; but not far outside, though out of immediate view, were some advanced points of rocks, on which destructive work was going forward; nothing less than an eternal fight with western storms and the ocean waves; and from thence there flowed past the entrance to this deep glen of perdition, a ceaseless curving line of foam and mangled sea.

In such an apparently untoward parallel of latitude then, as Sumburgh Head, or that on which Scotland has been able to cause so little growth of human institutions; in the region where her farmers are nowhere, and her miserable fishers are in general deeply in debt for their boats, their nets, and their last year's clothing, and without any other fuel than peat,—in the self-same parallel of northern latitude, but further east, and by that eastern position further from the great ocean,—has St. Petersburg been founded; a city of palaces, of imperial schools, and temples of science; of gorgeous churches and flourishing abodes of manufactures and commerce.

Trees are abundant in the distance of the landscape ; gardens are numerous, and native-grown wood serves in the fabrication of native-made railway carriages.

Though not entirely, yet is this in a considerable degree the effect of climate ; and we can now testify personally to the summer of this part of Russia, and speak to its being certainly more vigorous and cheerful than that of Shetland. We have had, indeed, through July and August, some glorious sunshiny days, though with a great number of rainy ones between ; but even therein, *i.e.* in the manner of the rain, have we recognized a new character ; for in place of continual dull weeping, as from Orcadian leaden skies, there have been here sudden angry agglomerations of densely massed piles of hard-edged cloud, reflecting the sun brilliantly from their upper surfaces in flesh-coloured beams of light, and in their deep purple regions of shade giving birth to lightning and thunder and cataracts of rain,—such cataracts that the country-people beholding, think once again of the Deluge ; and are only reassured when they see, after an interval, a gorgeous-coloured bow spanning all the eastern heavens ; while the bright orb of day reappears to them in the opposite quarter, with all his ancient symmetry, seeming stationary for a moment amongst the green and scarlet fragments of cloud that lie torn and floating in the west before he descends below the level horizon.

Then, perhaps in the night, a dry east-wind begins to blow ; in consequence whereof, on these broad-faced squares of St. Petersburg, such as the almost mile-long open surface of the Izak Plain, you are next day assailed with whole whirlwinds of dust, and rejoice when towards evening you see symptoms of lightning again travelling upwards in the western sky.

Most decided then, in this general way, has been the influencing power of mere juxtaposition to a large continent, in modifying a St. Petersburg from a Shetland summer, and if this be so here, what a much more remarkable degree of difference may we not expect to find, on penetrating really deeply into that same continent ; and coming at Moskva on the parallel of latitude, but certainly not on the climate of dear old, much abused, Edinburgh ?

Pardon, pray pardon, O reader, if we are long in starting, for so in truth is the train ; it is going to be a very long one, and so many more carriages are being added on behind, that our early one is now pushed out in front, beyond the limits of the station-roof ; and we have a wide prospect over the goods' department. There seems abundance of this sort of business transacted on the line, but we are not to have any of it with us ; for ours is purely a passenger train, a quick one and something aristocratic as well as autocratic ; for it is the only pas-

senger-train in the twenty-four hours, excepting one that starts about three hours after us, and carries hosts of mouzhiks between the two capitals, for a fabulously small price. Our own second-class fare is extremely moderate, and we might in the same train, have had an excellent third-class, or a most luxurious first-class, for considerably less than we should have had to pay in England for the same classes through the same distances.

Now though, we are off at last; the outskirts of St. Petersburg go whirling behind; and one or two distant churches with gilded domes glistening through the thick air, and a few long chimneys eastward, are the last remnants of the metropolis that remain long in sight; and then we are speeding along over the flat and wide country; grass-covered it appears, or bristling with indigenous crops of small birch-trees; and in the distance are the edges of extensive forests of them. Now and then there is a slight accumulation in the horizon, caused by the wooden huts of a village, decorated with a stone church, that has both an altar-dome and belfry-tower. In one such village, there was even something like a Tahtar pyramidal temple, four-square at the base; but before we could quite satisfactorily ascertain, it was beyond the range of our windows, and again we were coursing with a speed of more than thirty miles an hour over the broad flat plains;

plains everywhere flat, as flat and level in the distance as close by ; here and there the surface was covered with sapling firs and birches, but these contrasted by the sublime immensity of the plains, looked, when far off, merely like a taller species of grass ; and beyond them was still generally to be seen the thin blue line of a Russian horizon.

In about a quarter of an hour the train pulled up for a few minutes at a wooden station ; and the passengers trooped out on the long platform, smoking, and some already beginning to “ refresh ” at a small stall laid out with provoking dainties of sandwiches, little pickled fish, and many-coloured bottles. On re-entering the carriage, all men religiously extinguished their cigars, and away we went again over similar flat green plains to what we had crossed before ; sometimes they were rather wet, and their only dry places were under scanty groves of trees ; Scottish firs, we called them, and spruce. It was in the midst of one of these oases of the silent watery wild, that a touching little burial-ground appeared, where each grave was marked by a rude cross of perishable wood, and the infinite wilderness lay all around. Then came more marshy plains, then grassy plots, then distant forests, then a thriving little clump of trees. “ Oh, what a beautiful place to build a cottage in the middle of ! ” exclaimed my wife ; but there was no cottage near, only marsh and grass and

wood, and wood and grass and marsh. Presently the train drew up again, and at a noble stone-built station. "Breakfast," said some one. Breakfast ! impossible ; but before we could look round, the carriages were cleared, and there, sure enough, in the magnificent vaulted station-room, at long tables and short sideboards, were all the company devouring as hard as they could go, at a well got-up solid breakfast ; was it, we wondered, their second, or third breakfast that morning ? Whichever it was, they were allowed time, not only to take it, but to correct it afterwards by a smoke on the platform, before resuming their places in the carriages to traverse still more of the same flat country.

We thus started again, and an interesting village of Russian houses was passed, all placed gable-end to the road ; they were built of round logs of wood, with much carved work under the roofs, their eave-boards crossing each other at the summit, and there carved into figures of horses' heads,—a decoration claimed by certain authors to be of Scandinavian origin in architecture. A station or two was next stopped at, apparently to give passengers an opportunity for a little more smoking, and then we rattled over a level railway-bridge, across the Volchov river, a fine-looking stream for navigation, being some seven hundred feet broad, and so straight and clean along its banks, as if desirous of being considered

an artificial canal. What commerce too, has it not assisted at? for it is on this river, some fifty miles further to the west, that the ancient city of Novgorod is still to be seen. Novgorod, founded in the year 500 A.D., exceeding great and wealthy in 700 and 800 A.D., and by means, to a considerable extent, of the merchandise which ascended and descended on the Volchov's stream, from Lake Ilmen on one side to Lake Ladoga on the other; secure in that inland transit from attacks by Baltic corsairs, and yet able to communicate at safe periods with Finland settlements, or "the sacred Slavonic groves on the coast of Courland." In this present age, though the glory of the great Novgorod has departed, the Volchov still retains an eminent usefulness, serving as it does for an important link in the remarkable chain of inland navigation, whereby, with very little restriction, the produce of the Caspian Sea, and the whole line of that mighty river the Volga, is brought up to St. Petersburg, and thence through the Baltic distributed to the whole world; while manufactured goods and the rare botanical productions of the tropics are carried back and dispensed amongst the sturdy conquerors of the Tchorozem, the shepherds of the steppes, and even the wandering tribes of the central deserts of Asia.

Not long had we passed this commercial river, when another station was stopped at, and dinner was

announced. Why, it is only two hours after our last breakfast ! but that is no excuse here. There is another long vaulted station-room, cheerful and bright, with flowering plants arranged around, and steaming dinners on all the tables ; so in a trice every seat is occupied. Again, after half an hour, we enter the carriages, and again race along through what we might call woods, was there a less superficial extent of them ; but here the trees—still birch and larch and spruce (not very large perhaps, or ancient, any of them,)—are utterly dwarfed by the enormous horizontal plains over which they are spread, and we can regard them at last as comparatively little more important than the dried-up thistles of autumn in our own open fields in Scotland.

But what is the meaning of this, the train stopping again ? Yes, indeed it is, and before one of the large-sized stations, and dinner is announced again. Oh ! surely that must be a mistake ! But then we are informed that this stopping is to give another opportunity to those who did not get a seat at the larger tables on the former occasion. So while these supposed injured ones now obtain their triumph, and those who lately lorded it over them take their seats at the smaller tables, and then proceed to work again, —we wander outside the station, and admire the lilacs and the red-berried elders in the neatly-kept gardens, and watch the billets of silver-barked birch

wood, being thrown into the engine-tender by clean-handed and clean-faced men ; and wonder at the giant vase, almost as big as the tubulated boiler itself if set on end, which the engine, thus burning wood in place of coal, carries in lieu of a British locomotive's chimney. Large and mighty, this vase looms up before the vanishing line of the road in front, where it is lost in the cross streak of spruce-fir woods, which stretch around the level horizon, and seem to form in the distance an impenetrable ring that hedges us in on every side (see Plate No. 2, Vol. I.).

Then we regard the figures seen up and down by the side of the line of carriages, either under the station or outside. Outside are country people, sometimes railway labourers waiting for the line to be cleared ; sometimes the poor, halt, and maimed, choosing a most ill-advised instant and spot for pressing their claims to charity on the attention of certain of the gentlemen passengers. Under the light airy roof are sure to be two or three soldiers in long great-coats ; and also one of those brilliant men in brass-spiked helmet, bright cobalt-blue uniform with silvery-white epaulets, cartridge-box, and steel-scabbarded sabre clanking on the gravel, whom we took at the first station for one of the Emperor's body-guard on special service ; but see him now, so exactly repeated at each stopping-place, and looking always so perfectly quiet, innocent, sleepy, and into-

lerably used up, that we now consider him as some watchful guard of the line, whose part in the play we have still to find out.

Then there is a quaint little old man about four and a half feet high, with a long chin and long neck, and a long coat and a spiral walking-stick, who comes up with a low bow, and then, cap submissive in hand, starts off volubly with a very long story in pure Russian of grievances and undeserved wrongs. So we point him to the great seven-foot merchant in blue kaftan, who, being immediately applied to, crosses his arms solemnly, and with his long beard pressing grandly against his breast, looks down with pompousness on the little oddity before him pleading his case bareheaded ; and the great man has plainly much difficulty in making out who is who in the story. A priest-like man too, in black cylindrical hat with a pendent veil behind, comes up with a begging-tray, but he is an ill-grown, unprepossessing being whom we do not believe to be a true priest at all, and he is mortally uneasy and presently sidles away with a sheepish look, when he sees that he is being introduced into a sketch.

By this time the passengers are turning out from their refreshment-room, or taking a whiff of tobacco before embarking again ; and, can it be so ? yes, there is no doubt of it, there are the same eight, ten, or more ladies,—who lit their cigars at the first,

second, third, and all the rest of the stations,—at it again, blowing as big clouds as the men ; and there is one of the angelic beings in particular who, with a special air of deep understanding in the matter, takes the cigar, after a long inhalement, daintily from between her neatly-turned lips, holding it with just the points of a finger and thumb encased in delicate primrose kid, and then, like a Hebe trying to act Jupiter Tonans, she causes the white smoke to rush forth impetuously from her dilated nostrils. Alas ! alas ! we take note afterwards of that angelic being in the carriage, observing how she considers her time all but wasted during the journey, until the slackened speed promises a station at hand ; but then, out she whips her gold-clasped cigar-case, to ruminate with eloquent eyes, that nature had intended to captivate souls, over which of her lovely weeds shall be sacrificed next. It seems a difficult task for her to decide ; there is so much to be said for each of those scented beauties. But no sooner have we actually arrived at a station and debouched on its platform, and some nice old dear of a *paterfamilias*-looking gentleman has got his tobacco roll alight,—than up comes our determined smokeress, and looks at him as innocent as a newborn babe ; so of course he instantly becomes self-convicted of a solecism, and with floundering apologies humbly offers her a light ; and she takes it too ; but then, as she

can only persuade her own aromatic leaf to ignite thoroughly while he is pulling away with all his lungs at his, why there necessarily ensues a most piquant *tête-à-tête*, as they look intensely for a minute or so right into each other's countenances, at only the length of two cigars apart and the glowing little spark between.

About 6 P.M. we passed a large river flowing at the bottom of a deep valley, with many well-washed sand-banks in its bed, and then we were aware that we must have ascended imperceptibly some three hundred feet above St. Petersburg. Indeed soon after this, it was clear that we had entered the Russian Alps, the Valdai Hills, which, though forming the watershed between seas so distant as the Baltic and Caspian, and giving rise to the mightiest rivers of Europe, are hardly one thousand feet high at their extremest point; and a moderate incline seemed to enable the railway train swiftly to pass over them. In one part of the previous flats, a shallow cutting had shown some thin beds of limestone, but here there was only reddish clay, sowed however and sprinkled all through its substance, as had also been the soft upper stratum of the country all the way along, with small boulders of granite; boulders which the geologists derive from Finland and even Norway, and which Nature, by some pre-human agency, has thus extensively, and we may truly say

beneficently, distributed over the otherwise stoneless alluvial tracts of Northern and Central Russia.*

At 7 P.M. passed a river with gentle banks, and we were inclined to say in a beautiful country; it was as flat as ever, but the apparent level of the surface near us was somewhat diversified by large clumps of trees, much higher than the generality. The sun had now set, and in some places among these partial hollows the level white "stratus" cloud, or valley mist, began to form in patches that resembled lakes embosomed in trees. Slowly the extent of stratus increased as the light of day decreased, until by 8 P.M. it had enlarged to quite a sea of vapour, with only the tops of the very highest trees like distant islands above it; and then the rapid, smooth-flying train seemed almost coursing along in the dusk over nothing more substantial than the level surface of an ocean of cloud.

Ever and anon, however, did a "station" interrupt the rhapsodies of fancy, and every station had a similarly regal refreshment-room to those we have described; and each, as we went on, seemed to vie with the other in grander displays of tropical horticulture, so that under broad-spreading bananas and luxuriant *Ficus elasticus*, we almost forgot we were in Russia.

What were we wanting in a refreshment-room so

* Murchison, Verneuil and Keyserling's Geology of Russia in Europe.

soon again? Well, that was a doubt to ourselves; and even the caterers of the feast now seemed to expect that a little uncertainty might prevail with some of the passengers, and had arranged therefore to suit all possible cases; for those accordingly who wished for dessert, there were basins of luxurious scarlet raspberries and cream, and wines; for those who desired supper, hot soup and *piroga* pies; while whoso would have tea or coffee, let him hasten up to the eastern end of the room, where four great brazen samovars, as big as puncheon casks, are gloriously rolling out volumes of steam above, and allowing unnumbered cups to be filled with really boiling-water-made tea, at the four taps which each of them has below; and hosts of people are madly drawing therefrom.

On returning to the carriages after this refreshment, night had evidently set in; there was little to be seen of the country outside, while inside every one was drowsy; and now came out those stores of imported bedding, and you saw military men taking pains to make themselves as thoroughly comfortable in all minutiae of luxury, as if they had never known anything of war's alarms. Stations, nevertheless, were frequent all the night through, and at all of them there was a pretty general move amongst the passengers; some to court a friendly acquaintance with the hissing samovars in the midst of myrtle groves and orange-trees; and others to indulge in their loved

cigars, before turning in again for the next stage. And then to see how the spirit of the ladies did perseveringly hold out ! there were some of them, with charmingly sculptured countenances, but grown unhappily cadaverous in hue, and evidently, poor things ! they were courting an early and painful death, for they kept up heroically a new cigar at every station ; thirty-three mortal cigars in one railway journey ! what complexion, though the most exquisite the sun ever shone, or never was permitted to shine, upon, can long stand against such an infliction as that !

When morning gradually broke, we found the country more undulating, and decidedly altered ; there were still great tracts of forest ; now and then beautiful specimens of tall and ancient silver-stemmed weeping lady-birches, amongst hoary larches and magnificent spruce-firs ; but interposed amongst them there was now much arable and grazing land also. A parallel wooden railway bridge, over a deep grassy-sided dell, was passed ; and the workmen at one side of it were chopping something vigorously with their axes,—their log-like loaves of rye bread for their breakfasts it proved to be.

Hour after hour the quantity of trees sensibly decreased ; a village with its dominating church-dome and belfry more frequently came into view ; the country now looked dry, and all along the hill-sides, if hills they might be called, the grass appeared

withered from drought. We thought so at least, but were afraid to say it, until there came into view the bottom of a waterless channel, where, in the shade of its steep banks and with a remembrance of former moisture, a line of denser vegetation showed us clearly what ought to be the colour of true green grass, and proved that the generality of it on the open ground was sere and yellow. This was pretty convincing; but when we also saw a man with a horse and cart wending his way quietly across a field, and raising up a high cloud of dust about him all the way, that set the fact of aridity,—and indeed severe and extensive aridity,—beyond all doubt.

At 7.30 A.M., saw a village, which besides a green, showed also a gilt, dome of a church, and then we began to look out for Moskva. The collecting of railway tickets soon after convinced us that the celebrated metropolis must be near; yet not one of her “pearl-like thousand crowns” could be made out; there was only a dense and wide-spreading yellow cloud in front as if the desert sands of the Sahara were filling the air; and when suddenly the train ran us in amongst houses and gardens and ornamental sheets of water, all that we could even then perceive beyond our immediate neighbourhood was the dense yellow-ochre haze, above, below, and on every side.

This was the ancient city of Moskva nevertheless,

without any doubt: the character of the station-building told that; and besides, there were our fellow-travellers, impatient at the slow exiting from the ends of the carriage, pushing and rolling out their pillows and feather-beds through the side windows and tumbling them upon the platform floor. Those quilts and mattresses had done their duty; for, combined with the railway and its refreshment-rooms, they had made the passage from the modern to the ancient capital of Russia as vastly pleasant as it had been surprisingly quick; and thus has in fact been realized in the present age everything that the Great Peter could have desired for his duplex metropolis projects; by some means too, not very unlike that one long line of straight bridge-road which he did actually begin to construct, and would probably have gone on with, if a locomotive engine had in his day appeared on the scene.

Our luggage was easily claimed; and a bearded messenger making himself understood by a card, to be from an hotel that had been already recommended to us, we were soon outside the station and mounted on a droschky; but then came a vehicle for the luggage, especially our big photographical box, and the telega-man wanted such a price as made the guide shout at him and throw both arms right up in the air, like the fairies disporting themselves on the sea-sands at eventide in one of Danby's poetical pictures. So

we being sent on by ourselves, while the conscientious hotel-man sought for some other means of bringing up the boxes, drove away through long, winding streets of partly wood, partly stone, built houses, none of them high, and some very low ; pillars and pilasters were frequent along the front of the edifices, but their lines were rambling, and with gardens and cottages often intervening.

In the roadway the dust was deep,—two or three inches often,—and it rose, as the droshky passed, forming permanent wreaths in the air. There was no wind, and the sun was hot,—bright we were going to say, but that was not exactly the case. Not a single cloud was in the sky : why was not the sunshine bright ? Because the clay soil of a thousand streets, triturated in a dry atmosphere to impalpable powder, went up like a great smoke to heaven, and hanging there immovable, made all the firmament itself instead of blue, appear a deep yellow, above and all around. Through this hazy, yet sunlit and hotly sun-reflecting medium, every object was now seen ; and as we went swinging along in the loosely-hung droshky, and every now and then, above the low roofs of the nearer dwelling-houses, caught sight of the many light green, or bright red, bulbous domes of some homely-looking, white-plastered church, crowned with mighty gilt crosses of curious filigree work, and decorated with bracings of golden chains,

—the fact was made strikingly evident, that a mere twenty hours' journey had sufficed to transport us into a climate and plant us amongst scenes for which St. Petersburg had been hardly any preparation.

CHAPTER II.

ROAMING THROUGH MOSKVA.

September 1.

WHEN our droshky drew up in a little side street, and stopped at the small door of one of several low-roofed, two-storied houses, we thought it a mistake ; but no, this was actually Vilchov's "English Hotel," —the "Mister Vilchov" of which, could really, as asserted, speak English ; but then unhappily he was not at that moment at home, and for the very good reason that he was in Switzerland, taking his only son and heir a European tour. Hence matters were not quite so easy in the language way as had been expected ; and besides that, though we could get a bed-room and sitting-room to ourselves, the rules of the house, if they did not insist on attendance at the *table d'hôte*, yet required full payment every day, just as if you did. In vain we expostulated that we should be sight-seeing from morning to evening, and specially

occupied photographing churches about noon ; so how could we return to a hotel dining at such an inconvenient hour as two P.M ? In vain ! in vain ! for they only answered that no business was at that season going on in Moskva through the middle of the day, on account of the great heat ; churches were at that hour shut up, and every one tried to escape under shelter from the sun ; and happy those who could afford to take a seat at Madame Vilchov's well-spread table. At this instant Madame herself returned from market in a smart droshky, followed by another similar vehicle laden with all the best comestibles that were to be purchased, and in large quantity, for the house was said to lay itself out much more with reference to its *table d'hôte* than to general hotel accommodations ; whence it came that, though all diners need not be lodgers, all lodgers must be diners.

Thus there was no escape ; so we took our rooms from day to day, and after a pleasant little breakfast, sallied forth into the bright yellow sunshine and yet hazy air, to roam about the city, and to deliver personally some letters of introduction.

The magnificent style of some of the houses on the opposite side of the first street we turned into,—houses like young palaces, each retired more than its own breadth from the roadway, within its own court ; and that, besides being colonnaded, having double

gates, so as to allow streams of carriages of four or six to enter and exit easily in Burlington-House fashion,—all this made us think we were at the “ West-end ” of Moskva, and caused us to speculate on how much fuller it must be of nobles’ residences than St. Petersburg,—cold, damp, dark St. Petersburg ; but then, on walking a little further, came wretched bits of plebeian shops, then a rustic style of church ; then bigger shops, and then smaller ones again. In some of the streets there seemed to be a great many private houses of quiet, steady-going people ; and if there was an occasional shop amongst them, its small painted sign was almost the only distinctive character it had ; so that we rather thought ourselves in a quiet country village, and even felt somewhat backward on entering the door, without having previously been introduced in some manner to the house-owners.

At last one street appeared, which we felt sure must be in the more intellectual part of the town, from the preponderance of booksellers, printshops, stationers, watchmakers, and mathematical instrument makers, over and above the usual proportion of grocers and drapers ; and some of these shops seemed extensive and well supplied ; so then we began to look about for characteristics and peculiarities.

The roadway here was pitched with small, very small stones, and the footpath paved and protected

from Slavonian Jehus by short posts at frequent intervals. Caftan robes and flat caps predominated as the costume of the men, and among the women appeared several nurses in their national, half-Italian-looking costume, and elegant gold-adorned headgear. Of their charges, we had seen before in the north many specimens of the little gentlemen in scarlet tunics with Maltese gold buttons, top-boots very prettily made, like miniature imitations of what a Protectionist farmer is supposed to wear, and low-crowned black-beaver hats set round with the eye-ends of peacocks' feathers ; but now we saw a little lady about four or five years old, toddling along in silks and satins of the most heavy and costly description, using up, too, a large quantity of them ; not, however, in skirts stuck pertly out by barbarous London or Parisian hoops, but by the general roby character and elegant abundance of the dress, which was full all about, descended nearly to the ground, and began to expand from a waist supposed to be situated between the shoulders.

In this street too were many droshkies ; the men in priestly robes like their St. Petersburg brethren, but with hats resembling inverted flower-pots ; that is, truncated cones with the smallest perceptible brims ; very like what that rough, but in some things dandified, class the Australian stock-riders, insist upon being furnished with by their antipodean hatters.

Some of the vehicles too, had the unheard-of comfort of a sort of gig-like folding half-cover; but the novelty of general appearance culminated in the horses, who, each of them wore a large dressing-gown of printed calico with strongly pronounced pattern and bordering, that covered them in from head to hoof on every side.

The breezy garment kept them cool we hope, for the air was no doubt excessively sultry, and the radiation extreme, the sun smiting with vehemence; and yet there must sometimes be heavy rain here, for in a hollow of the street, where two gutters met, there was a grating over the eye of an underground drain, that was one of the most astonishing things in a sanitarian way that we have seen for a long time. It was made of wood, or more literally of young fir-tree trunks, measured seven feet long by nearly two wide; and had two rows of nine holes each, and every hole big enough to let one of the pigeons, seen pecking and footing about in all the streets, tumble down clean through it. Beyond this point, our fine first-class-shop street rose rather sharply, and then was brought to an end by houses built right across, so we had to try some of the small side lanes, to reach again any of the larger class of buildings. Thus we went on with varying fortune for an hour or two, exploring and making divers calls, but only ascertaining thereby that the

beginning of September is not a time for visiting Moskva with letters of fashionable introduction, for all those given to us invariably found empty houses, and tales of their owners being in the country, or on a foreign tour, or anywhere but in the ancient city.

The result of course, was, that we were thrown on Moskva to see it as we liked, and in the capacity of perfectly independent, and we hoped unprejudiced tourists. As such we looked around, and from the door of the mansion last visited, there appeared quite a forest of green domes and gilt crosses rising above a high white wall on the opposite side of the street. Most strange and attractive sight it was, but the air was so stifling, and the sun so burning hot, that actually the sentiment began to be felt, shall we quit the grateful shade of this large house, and venture across the open street under the pitiless pelting of these eternal rays of sunlight, showering down as they are doing everywhere in overwhelming abundance?

Oh, shame! cried memory; you who have been for years in Africa under a nearly vertical sun, and never cared about it there; do you come into the far north, and at the autumn season of the year, to find that noon-day heat is insufferable, and complain that a common hat or cap is not sufficient protection to the head, when merely walking through a few yards of sunshine?

True, alas ! too true it was, and therefore to an islander, passing strange ; but this was the fact, that at that moment, though the month was September,—to us then standing in the latitude nearly of Edinburgh, but in the middle of a great continent instead of a narrow island,—the solar heat did so reverberate on every side, that we thought twice before exposing ourselves to it, even in crossing a street.

The street, however, in a few minutes more was crossed, the walled enclosure entered, and the church was then found to be rather a shabby plastered building below, with its doors all locked. Another group of exotic domes and crosses was next seen a little way southward ; but who would now go to it through so much sun, and after all, to find the doors most probably again locked ?—so we turned from the sight, and selected our way back to Vilchov's inn by one side or the other of divers oblique streets and winding lanes according as they promised most shade from the all-dominant sun.

The inn's dining-hall, when reached, was not a bad room, and was deliciously cool. It was on the north side of the house, and had had the windows and their shutters closed the greater part of the morning in Indian style, to keep out reflected glare. At frequent intervals along the table were arranged large plates with fragments of ice as clear as crystal, and large bottles of ice-cold water. In St. Peters-

burg frightful stories are told to strangers, of the danger they incur in partaking of raw Neva water, and still more of Neva ice. But here, whether it was that the same commodities are furnished chemically purer by Moskva's sacred river, and that can hardly be; or, that surrounding circumstances were different,—both ladies and gentlemen plied eagerly at the solid as well as liquid coldness, even while the company were collecting. And as for the subsequent dinner, except for that magnificent episode of Madame Vilchov herself sailing up the room in a new Parisian dress with flounces and furbelows and hoops of marvellous sweep,—its grand feature was, *hearing* the hissing of frying and boiling, with the hurry-scurry of unfortunate cooks about the, to us, happily remote fire-place of a neighbouring room; and *seeing* about our happier selves emblems only of coolness and quenchings of thirst; pillars and grottoes of ice, from which we could break off unlimited fragments to stick into our tumblers, and then drink off the water of liquefaction as fast as it could form.

Continually the waiters came rushing in from their regions of fiery torment, with huge dishes of ready carved meats, roasted, grilled, stewed, and diversely prepared; and we dutifully refilled our tumblers with ice, to herald in the new course, and again to wash it down; and again, to bid it adieu; nor envied we the popping of champagne corks, and the foam-

ing glasses thereof, which the more wealthy commercial-looking men, occupying all the grand table, were delighting themselves with, as they conversed in a Babel of tongues ; wherein we could not make out a single word of English.

How many times we emptied our well-chilled tumblers that day, we are now, as we write, perfectly alarmed to think of ; but at the time, we no more thought of counting, than we should have thought of noting the number of respirations we took from beginning to end of dinner, or the number of beats of the pulse, or any other necessary part and parcel of the working of the vital machine. All we took care for, if indeed we took any care about what seemed a perfect matter of course, was simply to let nothing interfere with the alternate filling and emptying of our capacious water-glasses, a selfish process which seemed to be shared in by all the party. And when all the water-decanter on the table had at last been drained ; and in the broad dish where, half an hour before had stood a lordly rock of solid ice, there now were only two or three tablespoonfuls of drainings with a little lenticular fragment or two of the frozen material still floating therein,—why then, the dinner, our first dinner in Moskva, was for us finished, and we left the noisy hall for the quiet and comfort of our own sitting-room.

Simple idiots that we were, to expect comfort

in such a room ; but we had taken it, be it remembered, in the cool of the early morning, and before we had had any idea of what summer, in a real continent, is. Accordingly at eight A.M., to travellers just arrived from dark, drizzly weather in St. Petersburg, it seemed quite a privilege to obtain a corner room of the house ; not large, but brilliantly illuminated by four windows, two and two on adjacent sides. “ Oh ! here,” ejaculated we, full of new-born delight on counting the number of windows “ what shall here prevent our reading, writing, or drawing for fourteen or fifteen hours at least out of every twenty-four ? ” All this was at eight A.M. ; but at three P.M., oh, what a change ! The sun had then been shining into the two south-eastern windows, and almost through the walls on that side as well, for six long weary hours ; and now he was just coming round the southern angle of the house, to shine away into the other two windows on the western side of our unfortunate room. In fact, the unhappy apartment it now appeared, was penetrated through and through the whole day long by Moskva’s burning summer sun, and had by this time become a very oven of stifling and exhausting heat. As for reading or writing, we were fit for nothing of the sort ; and could only try in vain to block up some of the windows, and convert our heads into wet-bulb thermometers, by throwing a moistened towel

over them, as we reclined behind the table at the utmost distance which a corner of the room allowed us, from the two sun-roasted, fiery, red-brick walls.

During the hours which followed, we had full demonstration of there being reason for Moskva sights being shut up, and Moskva people laying by in the middle of the day, at this season of the year; and not until five P.M. did we feel able to venture out again, though a new city was spread before us. At that hour, however, we started in a droshky to find our way to the Imperial Observatory.

Though every other lady and gentleman to whom we might have had letters of introduction, should be taking their ease in the far distant greenery of country seats, yet the Astronomer, we made sure, would be at his post; and we had already begun to find that in travelling through Russia, any acquaintance, however humble, with astronomy, raises up friends in the most unexpected manner and in all directions.

Away then we drove through many miles of Moskva streeting, generally towards the south-west; and in that course found mostly the same unequal character before remarked, and an appearance more of country-town than metropolis; except indeed every here and there, where a grand colonnaded public building stood like a giant amongst the smaller dwellings. In all parts picturesque churches breaking out above in tropical exuberance of domes

and crosses, and below, not unfrequently decorated by outside mural paintings in oil, of sainted personages, were abundant. At regular intervals too, was seen the tower of a police-station, where mounted on the upper balcony, two grim soldiers were pacing their watchful rounds, on the look-out for fires in their appointed district.

Near the outskirts of the town, we crossed by a handsome bridge a long winding piece of water, skirted on either side by luxuriant gardens. Our driver, evidently proud of the beauty of the prospect, here slackened the pace of his prancing horse, and turning round with animated countenance discoursed to us in pure Russ on the name or history of each prominent point. Had we understood his oration, we have reason to believe the more important facts which he enunciated, divested of the poetic halo in which his love of country enshrined them, were, that this winding and river-like piece of water, was not the river of Moskva, the Moskva itself, from which the city derived its name; neither was it Moskva's second river, the Yauza; nor yet its third, the Neglinaya, or little Neglina; (for on the confluence of these three rivers was the city originally founded.) Nor yet was what we saw either the Presna rivulet, or the Rebenka, the Sinitchka, or the Chetcherka; but it was one of the many *lochs* for which the hallowed site of Moskva

is so celebrated. They are said, large and small, to number two hundred and fifty-three; and though their Russian name *prudi*, is generally translated "ponds," yet that word cannot or should not to British ears, convey any idea of the charming aspect of these broad sheets of clear water, reflecting the blue of heaven in the midst of ornamental shrubs and bowering green trees; neither can it fitly describe what must have been the capacity of that one in particular of the *prudi*, where Peter the Great made his first experiments in tacking and beating against the wind on board an English-built vessel; a feat which the clumsily-shaped native barks of that day were totally innocent of.

So our young *isvostchik* was quite right in gesticulating with vehemence and goodwill from his driving-box, in order to make us fully comprehend the importance of Moskva's numerous *prudi*; lakes, or lochs, but certainly not "ponds." Some of them are dear to the citizens, on account of the public parks laid out on their banks, especially the *Krasniye*, or beautiful, *prudi*; but even those are not equal to the *Presnenskiye prudi*, which were those we were looking at.

Being bound however to the Observatory, we gently reminded our driver of his covenanted duties, and then he pushed on at a good pace, over undulating roads, rather than streets, for there were hereabouts

more gardens than houses. Then he came to and passed the circumvallation of the city, and in the midst of a very heavy bit of sand we at last pulled him up, and declared that he must have gone too far. He looked rueful, and hailed divers of his countrymen to inquire, but though they knew the exact whereabouts of St. Gregory's, or St. Dionysius's, or St. Joachim's church, the temple of astronomical science they were doubtful about, and very various in their indications as to its probable locality. The horse though happily stood out well, and albeit his legs were so thin, and the evening so hot, yet he pulled us bravely up first one loose sandy hill, and then another, until finally, amongst distant tree-tops and golden crosses with bell-towers intervening, we caught sight of that peculiar form of drum-shaped revolving dome, which M. Struve erected with so much success at Pulkova, and established it as an eminent speciality for Russia in Observatory architecture.

The Moskva dome nevertheless was still only in course of erection, and was, in fact, an addition being made to the Observatory in 1859, to contain a new equatorial carrying a nine-inch object-glass. The workmen had all left at the late hour when we arrived, but their scaffolding and materials were for the time in possession of the place, and quite overshadowed the primitive part of the Observa-

tory ; chiefly, a fine meridian apartment, with a first-rate transit-circle. There were many small portable instruments in corners of the room, some of them excellent alt-azimuth instruments ; for the Astronomer, besides teaching a class in the University, is much occupied with the officers engaged in the more refined part of the geodetical operations now being prosecuted in the neighbourhood. He had also, connected with the bye-ways of science, a six-foot in focal-length reflector, of the silver-on-glass plan, sent to him the year before by Professor Steinheil, of Munich, and tending to demonstrate the priority of the German, over the alleged French, discoverer of this method of constructing improved reflecting telescopes.

From these subjects the Professor presently led us to a side of the garden where, under a small open summer-house, his good lady and two little daughters were hospitably preparing tea, and the samovar was sending forth in perfection its lively wreaths of steam. The tea, as usual in Russia, was exquisite in flavour, and after we had asked many questions for our own information, we were in turn interrogated, as having just arrived from St. Petersburg. What sort of weather had there been there ? So when we spoke of the drizzly morning on which we left, and the number of days whereon the droshky horses had had their tails and manes tied up out

of mud's reach, and spoke of the evening thunderstorms, and the night deluges of rain, our host stared. "Why," exclaimed he, "look round here! everything with us is dead from drought!"

Such truly was the case, and a desperate summer-house it was, where the creepers that once had adorned it with green leaves and flowers now hung dead and dry as tinder; the grass lawn outside was arid and brown, and the ornamental plants roasted to death. In the further parts of the garden were a few large shrubs still showing some degree of greenery, but it was of a sad hue, and their foliage was so shrivelled as to make them look more like Australian plants, with their leaves set edgeways and throwing no shade, than like any productions of umbrageous Europe. In a remote corner too, partly under shelter, was a gaunt collection of sunflower-plants, the flowers still showing a trace of freshness of yellow, though stems and leaves were utterly withered; and these were about the most cheerful objects we could find, on our eye-survey of what might have been a most charming garden but for this terrific dry summer-heat, which had so effectually ruined all its beauties, and turned it into a little Sahara.

By the bye, said we, what is the meaning of every peasant's garden by the side of the railway as we came along, having so large a bed devoted to sun-flowers?

“Do you hear that question, my *golubtchik*, and will you please to answer it?” was addressed to one of the little ladies, who though not yet much higher than the table, was listening very attentively, and was quite competent to follow the conversation in two or three different languages. The child’s intelligent black-beaded eyes glistened amazingly at the question; and though she thought it her duty to run away and hide on being spoken to, yet she presently announced, looking for a moment from behind her mamma’s chair, that she supposed it was because the children insisted on the father planting the sun-flowers, that they might have the rich oil-producing seeds to eat; and then she vanished again, but not out of earshot, we had good reason to believe.

The kindly Astronomer next took us up to the top of the scaffolding above his tower; there, in the last rays of the evening sun, to show us his view of Moskva. It was a goodly view to those who had never seen the city from any other quarter; but was rather too full of trees to be considered a decided city view; for we had to look across precisely all the wooded regions of the *prudi*, where the trees were vigorous and green still, before coming to the city proper. The mass of this lay to the north-east of our position, and contrived to exhibit far and near a large number of gold-burnished domes; then turning east and south, came the winding vale of the

river, the river Moskva ; and then the southern and smaller part of the city, on much lower ground than the northern.

We took a good deep breath of the sultry evening air, and gazed hard into the dusty atmosphere, but could not distinguish much more than the metallic glitterings of some of the principal buildings. In the plain beyond, several isolated tall towers rose distinctly through the hot hazy strata, and were said to be those of monasteries outside the city ; while the view was bounded to the south and south-west by low flat-topped hills, or rather the edge of a steppe country.

“Those are the Sparrow Hills,” said our host, “and if you can just come up to the highest part of the scaffolding, you will see the identical place where Napoleon Bonaparte had his first view, and his last also, of the ancient metropolis of Russia.” Of course we climbed up to the position indicated, and seating ourselves on the edge of a board, looked up the valley of the river to a particular part of the long line of the *Vorobéevya Gora*, or Sparrow Hills, where their edging of trees was broken and sterile.

There, then was the exact point, where the French army, after their long and wearisome march across the plains beyond, having come suddenly to their termination over the bed of the river below, and with the sacred city in front of them, began to plan

those scenes of excess and license of every crime ("murder excepted," says the Marquis de Chambray), with which they so soon after endeavoured to indemnify themselves at Russian cost "for all those fatigues and privations, above their strength to bear," which their own unscrupulous leader had forced them to undergo.

If on that occasion, September 14, the sun which shone on the scene wore the same ominous aspect that he was now doing to us on September 1st, he might rightly have been gazed at with prophetic awe; for, reddened in tint and in a copper sky, he seemed in the act of burying himself in anger amongst the lurid strata of Moskovian dust-cloud, which gradually thickened near the horizon to a dark-purple colour, and was there utterly impenetrable even to the solar beams.

We saw all this; but with minds intent on peace alone, were thankful for the beautiful calm which reigned in the air, and for its exquisite temperature: and while we were enjoying these on the summit of the tower, the native inhabitants of most of the houses around began to collect in their gardens, or the open spaces about, to recreate themselves after the toil and heat of their day of labour. Thus it was then, that on various sides songs began to ascend, and one of them so entranced us with its rhythm and

melody, that we all stopped short in a discussion on the campaign of 1812, and listened fervently until the singer's last note had expired.

"Ah!" said one, who understood the language, "that is not a bad example of our old national songs. It is so old that no one knows who was the author; and is so generally sung all over the country, that no one cares to inquire; yet we may safely say that it belongs to Little rather than to Great Russia; from the riding in opposition to the driving, which is indicated. It is only silly, countryfied nonsense, but if you really insist on hearing what it is all about, here is the song, as very admirably translated into your own language by Sir John Bowring, many years ago:"—

"What to the maiden has happened?*

What to the gem of the village?

Ah! to the gem of the village.

"Seated alone in her cottage,

Tremblingly turned to the window;

Ah! ever turned to the window.

"Crowds of her youthful companions

Come to console the loved maiden;

Ah! to console the loved maiden.

"Smile, then, our sister! be joyful.

Clouds of dust cover the valley;

Oh! see they cover the valley.

* 'Specimens of the Russian Poets.' Translated by John Bowring, F.L.S. London, 1821, and Part II. in 1823.

“Smile, then, our sister! be joyful.

List to the hoof-beats of horses;

Oh! to the hoof-beats of horses.

“Then the maid looked through the window,

Saw the dust-clouds in the valley;

Oh! the dust-clouds in the valley;

“Heard the hoof-beats of the horses,

etc. etc. etc. etc.

“Truly as you say,” resumed the spokesman, “there is not a great deal to settle the riding *versus* the driving, but then surely both the “hoof-beat of horses,” as the only audible symptom of an approaching party, and the general *quadrupedante sonitu* of the whole ballad are unmistakeable. Moreover, the “dust-clouds covering the valley,” and the light-hearted pleasant termination of the whole, for which see Sir John’s little treasure of a book, are eminently Little Russian. Dust, no doubt, we have here about us at present, so that that is a perfectly accurate remark you make upon it; but your question, as to whether there is still more dust in Little Russia, is sage in the extreme; for there *is* more dust there; you are more exposed to it too, and as a summer pilgrim you would be condemned to travel in company for ever with a dust-cloud of your own creating.

“That country, you must know, lies on the Tchernozem, or black soil of Russia; an astonishingly fertile material, like the prairie-land of North America in similar latitude; and actually several

feet in depth from the surface downwards, seems to be made up* of the very elements, chemical, in a state of infinitely minute subdivision, of all cereal grains, and of nothing else, for trees will not grow there. Quite true therefore was Mr. Kohl's description of the open, bare-looking condition of the country about Karkhov, and the unmitigated bog which it all presented in the spring, when the winter's snow had melted, and there was no particle either of wood or stone for hundreds of miles, wherewith to make any causeway over the universal mud. 'Do come and take tea with me this evening,' he writes that a wealthy and hospitable friend there said to him one fine spring day;—'you'll meet a pleasant party, and you'll have no difficulty in getting to the house, for I have had all the road up to my very door, laid down this morning with a thick coating of horse-dung.' That was to keep his guests from sinking above their knees into the black corn-growing compost.

"This state of things, however, is very short; and hardly is it over, when on comes their summer: and that is really something like. Ours here in Moskva is pretty fair; but cannot be compared either for duration or degree to that of Little Russia. All over our empire, or in all the Russias, Great, Red, White, Blue, and any others, men look to

* Murchison, Verneuil, and Keyserling, p. 559.

the climate of the 'Little,' as something super-terrestrial.

"The most Anacreontic and Horatian of our poets was from there; and from thence of course the inspiration of his constant theme of bright-eyed love and joy. So when Karamsin writes his life, can he begin otherwise than as he does begin, namely, with the words, 'Hippolitus Bogdanovitch was born under the beautiful heaven of Little Russia?' Of course not; for that is the key to the whole of those exquisite songs of our joyous poet of '*Dushenka*.' *Psyche*, you would call it, after the Greek, but our language enables us to give the Greek *Psyche* in the very words which our peasants understand as such; and even more still, to cap the Greek by adding to their meaning, one of those fond diminutives which the practice of lovers in all nations, everywhere commends; *Dusha*, would be the Russian of *Psyche*, exactly; but *Dushenka*,—oh! the very sound of it makes one's heart dance with delight and enlarge with affection.

"He was a true poet of his part of the country, was Bogdanovitch; and later in life, tired with the seriousness of the North, and even with the splendours of the palace, he returned once more, says his historian, 'to the heavenly climate and the fair fields of Little Russia.' The simple truth is, however, that the fairest field, when composed of infinitely

finely divided atoms, may have a deal too much of one of your very fine climates ; for in the middle of our large continent, when the sky is undimmed by a single cloud for month after month, and the sun looks down day by day without fail on the devoted field, it produces a dryness in the soil, and a tendency in its particles to rise and remain suspended in the air, which almost passes belief. Not only do travellers, not only does each individual ox or sheep, raise a cloud of dust wherever it traverses the dry grass ; but actually, not a bird can alight on the ground, or take wing again, without raising its little cloud of the Tchorozem particles.

“Pray then,” continued our Russian expositor, “do me the favour of believing, until you can see for yourself, that our Moskva dust-clouds are nothing to those of Little Russia. Besides that too, we in Great Russia, have trees ; and *our* peasants are fond of moving and melancholy thoughts. Listen to this song :—

“Hark ! those tones of music stealing
Through yon wood at even ;
Sweetest songs that breathe a feeling
Pure and bright as heaven.”*

“Or rather this, which is older and more national, and begins thus—

* Bowring's Russian Poets.

“Listen yet awhile, thou cuckoo dear!
Call not, call not thou so sadly there!
For without thy notes my heart is torn,
Sickened, and dejected, and forlorn!”*

“Or take this specimen—

“Thou field of my own, thou field so fair!
So wide, extensive, fertile there!
Adorned with gems so gay and bright—
With flowers, and butterflies, and bees,
And plants, and shrubs, and leafy trees—
Thou hast but one ungrateful sight!

“See there upon the birch-tree’s bough,
The young grey eagle flapping now
O’er the raven black that he tears asunder,
Whose warm red blood is dropping under,
And sprinkles the moistened ground below:
The raven black—a wild one he!
And the eagle grey—his enemy!”*

As a tender appeal was here put forth, not to go on with so terrible a story; we had an opportunity of asking a question, which had long troubled us; viz. Is Little Russia the country of the Kosaks?—and, are Kosaks synonymous with Little Russians?

The answer was, “No! There are many Kosaks in Little Russia; perhaps the majority of the men are Kosaks, but not all; and there are Kosaks among the Great Russians, the former being usually known, as the Kosaks of the Ukraine, of whom was

* Bowring’s Russian Poets.

the rebel Mazeppa; and the latter, as the Kosaks of the Don, the great pioneers of Russia's eastward and southward conquests; and of whom was the noble Platov.

"These Ukraine gentlemen take it very easy. Theirs is a country where the women do all the hard work, and the men dance and sing songs, and keep up a parti-coloured national costume, and wear pert little moustaches, and are always talking of their pure blood and noble ancestors, and are morally and socially for ever looking backwards; or, if any profession must be entered, they become Kosaks; and then have horses to sit upon, and to carry them about, and enable them still to live a pleasant style of life, requiring very small thought and less care.

"Among the Great Russians, on the contrary, the men are hard workers and deep thinkers on the future rather than the past; they do not interfere with the women in their departments, and do not give them men's work to do. In place of moustaches, the Great Russian wears a long and broad beard, his clothing is sombre and flowing; his ideas are well calculated out, and grand; he is provident, and accumulates property, both in worldly goods and territorial possessions. He is an improving man in fact; and in general rather scouts the notion of Kosakism. But then in every large col-

lection of people there are always occasional loose fish, who will not live lives of homely quiet, or even solid gain ; but have notions of liberty which can only be satisfied by passing their time in something like the improvident freedom of savage life. In England, such a boy runs away from home or from school, and takes to the sea as a matter of course ; in America, the same boy at the same age probably repudiates his father on account of difference of political sentiment, and begins to speculate on his own hook ; but in Great Russia, the lad takes to Kosakism in a serious and solemn manner, on the wide and silent steppes that stretch over a third part of the globe."

" Does that occur often ?"

" Often enough to have become a poet's subject with us ; for thus runs an old song :—

" Alas—"

" No, no ! if you please, let's have the song."

" But that is precisely the beginning of the song, and a very characteristic beginning too, for anything that in this part of the country is thought by the common people to be touching and full of feeling."

" Oh ! then I beg your pardon ; pray continue."

" Alas ! on that plane, distant meadow towers
A little tree, whose branches raise them high,
And 'neath those branches grows the emerald grass,

And o'er the grass full many a floweret blooms,
There many a floweret blooms as blue as heaven."

"Oh! I like that," exclaimed a lady present, in an unmistakeable little fit of warm enthusiasm.

"Certainly, Madam; but please to listen.

"And on those flowerets was a carpet spread,
And on that carpet sat two brothers lone,
Two lonely brothers, linked in strongest love:
The elder brother waked the cymbal's voice,
To which the younger's sweetest hymns were joined:
'Two sons, our mother gave us to the world,
Our father like two falcons reared his boys;
He reared and fed us—yet he taught us nought—
But rear'd us on this wide and foreign land:
A wide and foreign land—the town unknown;
Wide foreign land—dry even without the wind—
Dry without wind, and chilly without frost.
Our mother deemed we never should get free,
But we have freed us in this happy hour;
And now, O mother! thou wilt find us not.' " *

"Oh, dreadful!" interposed the lady. But the gentleman argued, "Probably; yet remember what a second marriage is to the children of the first. Thus, for example, does it drive to distraction an estimable young lady."

"Of Great Russia?"

"Genuine; and of a class no very great height above the country peasants. Thus does she mournfully sing:—

* Bowring's Russian Poets.

"If the frost nipped the flowerets no more,
 If in winter the flowerets would bloom,
 If the woes of my spirit were o'er,
 My spirit should cast off its gloom :
 I would sit with my sorrow no longer,
 O'erwatching the dew-covered field.
 I said to my father already,
 Already I said to my taper,*
 'Nay ! marry me not, O my father !
 O marry me not to a proud one !
 O seek not for high piles of riches,
 O seek not for palaces fair,
 'Tis man, not his palace we dwell in,
 'Tis comfort, not riches, we need !'
 I hurried across the young grass ;
 I threw off my sable fur cloak,
 Lest its rustling perchance might betray me,
 Lest its buttons of metal might tinkle—
 Afraid my step-father would hear me,
 And say, 'She is there,' to his son—
 To his son—who is doomed for my husband." †

"What an ending ! why it is just as if one was in
 a pleasure-boat, and after floating gaily along for a
 time on a pellucid stream, suddenly heard the keel
 run right into a gravel-bank, grating harshly, and
 getting fixed there immovably, beyond all hope of
 recovery."

"Well, that is exactly a characteristic of the olden
 Russian poetry : each piece, however long, is con-
 structed like an epigram ; you are led pleasingly

* Taper burning before a saint.

† Bowring's Russian Poets.

and unsuspectingly along the earlier parts ; and then, just at the last line or two, the essence of the whole is brought out, and with a degree of point that makes it crack almost like a whip ; so, if the object be to reprove a sinner, woe to him. Another frequent feature is, the teaching of man by reference to animals. And this style, or ‘fables,’ is a very favourite one amongst our more modern, cultivated poets of the upper classes, educated on the now fashionable West European system. But they are wretched imitators ; and, in the form of poetic fables, actually set quadrupeds and birds talking about either matters of physical science, or the merits of rival opera-singers in St. Petersburg, in a manner that touches the hearts of no one ; but here, on the contrary, is an example of our more ancient, and natural-minded writers :—

“ On an oak there sate
 A turtle with his mate.

 Swift a vulture sprung,
 Eagle-eyed and young,
 And he bore away
 That poor turtle grey—
 That poor turtle grey,
 With his ruby feet ;
 On the oak-tree wood
 Spilt the turtle’s blood ;
 All the plumage soft
 O’er the meadow driven ;

All his down aloft
Borne by winds of heaven.

“ Oh how desolate
Sat the mourning mate!
How she groaned and sighed
While her turtle died!
‘ Weep not—why complain,
Little turtle, love?’
Said the vulture then
To the widowed dove.
‘ O’er the azure sea
I will bring to thee
Flocks of turtles, where
Thou shalt choose thy dear,
Choose thy lover sweet.
Choose the brightest, best,
With a fair grey breast,
And with ruby feet.’

“ ‘ Fly not, murderous bird!
O’er the azure sea!’
Thus the dove was heard
Answering mournfully.
‘ Bring no flocks to me
O’er the azure sea!
Can their presence be
Comfort to my breast?
Will they bring to me
The father of my nest?’ ” *

Long before the recital of this piece was over, the shadows, but happily, neither the cold nor the dew, of evening had fallen thick around us. The stars could scarcely be made out through the heavy dust-

* Bowring’s Russian Poets.

clouds ; but we thought, as we looked due north, that there were rose-coloured flashings of a rich aurora. Gradually these appearances intensified as the general darkness increased, and from innocent rose-pink they became ruby coloured, like the ornamental feet of the poor little grey turtle-dove ; and then suddenly growing really fiery-red, they waved aloft as if in triumph of victory.

“ Do you see that ? ” we exclaimed.

“ That ! oh, its only a house on fire.”

“ Only a house on fire ! You talk very coolly of it.”

“ Well, these accidents occur so often ; I dare say if you look round now, you’ll see two or three more ; there, there is one to the north-east, and there is another to the south ; and if people will build wooden houses, they must expect them to take fire more frequently than stone dwellings. But we have splendid police establishments, and excellent fire-engines ; so that the destruction is never allowed to spread.”

This was not very great satisfaction to us, especially as one of the fires seemed exactly in the line of bearing of our hotel. So we were not quite easy until the *isvostchik* had put his horse again into the *droshky*, and we were rattling back at a smart pace through the winding streets. In our way, we counted no less than seven fires, *i.e.* the reflec-

tions of them in the sky ; and though we feared that every next turning would show us M. Vilchov's establishment in flames, yet we arrived at last, to find it perfectly safe ; its inhabitants sound asleep, but its interior hot, dry, tinder-like, and ready to go off at a moment's notice.

CHAPTER III.

FIRST VIEW OF THE KREMLE.

September 2.

ON September the second, the sun had risen before we did, so that when we looked abroad, there was Moskva as bright as ever, with a cloudless sky but yellow haze; a richly luminous natural veil, half "Claude Lorraine" tint in colour, warm and pleasing yet grandly mysterious, and only positively penetrated here and there by the piercing rays projected from some lofty golden dome or gilded cross.

To have been twenty-four hours in Moskva, and not yet to have seen the Kremle! The idea was humiliating. Yet before we could indulge our eyes with the sight, our calmer reason told us of a little piece of grave duty to be performed, and we went and did it. It was a self-imposed duty, no doubt; but as others of our countrymen may bind the same on themselves, it may not be out of place here to mention the mode we took for accomplishing it.

In coming to Russia, it had been our desire not only to see its lions, but to carry them away with us, so far as that could be managed on photographic plates, in order to allow our friends at home an opportunity of seeing for themselves, and giving an original opinion on the very objects as they exist in nature. In short, we had brought our photographic apparatus to Russia for something more than merely to say we had brought it ; yet up to the present time, we could not claim to have done much more. Why was this? Well, in a general summation that we took during our night on the railway, of all our past proceedings in St. Petersburg, we were rather inclined to attribute it to the too kind endeavours of some of our friends there to preserve our dignity for us. "Photograph," said they, "in the open streets ; oh no ! that would never do ;" and they immediately set to work to place obstacles in the way of our degrading ourselves so far in their decorous eyes.

"These fine Egyptian sphinxes resting on the granite quay of the Neva, we should so like," we said, "to picture them."

"Well, if you can do it from a boat on the river, all well and good ; we'll go and help you in that case," returned they. But every photographer will know that a boat foundation was impossible to dry plates. So then we tried another subject,—the tombs

of St. Alexander Nevski Cemetery. They were allowed to be beautiful, touching, and truly Russian; but then the site was too closely bordering on the publicity of the streets; and though our friends were acquainted with the Archimandrite, and had previously extolled his learning and liberality, they were now simply silent.

After that we asked wildly, right and left, how to get leave to photograph public buildings and scenes in St. Petersburg? One person said, "Oh, just go and photograph them,—there is no difficulty about it." Happily however for ourselves, a kindly old lawyer warned us, just in time, not to think of doing so without first obtaining official permission, or the police would certainly be down upon us. Thus spake the man of law; and on one of the last evenings of being in St. Petersburg, we so far verified this advice, that seeing a Frenchman levelling his camera to take a view of the Champ de Mars and Suvorov's statue, and conducting his proceedings without official interference, we went straight up to him, and on inquiring, were told that he had received an express license from Count Shuvalov, at his office in the Bolshaya Morskaya.

So having ruminated on all this during our journey, and having found, as already related, after arrival in Moskva, the mass of our letters of introduction fruitless, what must we do but sit down, as we did

on the evening of the first, and write off an official letter to the Governal-General of Moskva, Count Strogonov, asking for leave to photograph in the city under his rule, and appointing ten o'clock next morning for our calling upon him for an answer.

Now therefore, as our prescribed morning had arrived, we mounted a droshky and drove straight away to the Government House, a grand colonnaded building in modern Italian style, occupying one side of an open square. In writing of all this, at home in Edinburgh, we fear that we were a little impudent in addressing so great a functionary; and, as we now look upon it, there is something of that sort of dizzy feeling which comes over one when thinking by the fireside of how you dared, on some particular excursion, to walk quite unconcernedly along such and such dangerous goat-paths on the face of a precipice with a yawning gulf of many hundred, possibly thousand feet below. At the time, however, it did not appear at all extraordinary to us, for we were so wrapped up in the notion of doing what should be thought by the highest local authorities to be the right thing, that we simply went straight on and accomplished the part.

Arriving therefore at the palace's grand entrance, with a card previously prepared, and indicating as well as we could to the soldiers on guard that it was the "*Guvernateur*" we wished to see, we were shown in

from one group of orderlies to another, and then upstairs into a waiting-room, where an aide-de-camp took the card and our statement of business in French. After an absence of a few minutes he returned, and requesting us to follow him, led the way through long and handsomely decorated saloons, and finally opening a door at the further end, presented us to the Governor-General in person.

He was a noble-looking veteran, was the Count Strogonov; tall, thin, and somewhat careworn, but more thoughtful; with a large brain, long as well as high, and deeply-seated eyes. His room was something of the library sort, and his table before him covered with work in hand. He had been a little surprised with the naïveness of the request, as such authorizations, he said, were generally rather affairs of the police, but on the present occasion there was no need even for that; and he informed us most courteously that we might go and photograph anywhere we pleased in Moskva, without fear of interruption from any one. So thus, in three minutes, our affair was accomplished; and then, feeling legitimately free of the city, we set out to discover the Kremlé on foot,—happy at the idea that anything which should strike us as strange or rare by the way, we could now fearlessly plot to bring away in the camera.

Nor had we far to go, for following downhill a

little winding street, the only exit this way from the Governor's palatial square, we soon came to a striking church, whose dedication is "to the Birth of the Virgin Mary." Its walls, doors, and windows certainly had nothing very remarkable about them, and were simply modern European, bright and clean; but then the roof was surmounted or spread over by five separate little gilt domes, each of them having on its summit a huge gilt cross of most ornamental open work, with the conquered Moslem crescent below, the peculiar Greek foot bar on the shaft of the cross, and rays of glory issuing from the meeting of the arms. These all in minute filigree and with their various gilt chain-braces fastening them to the domes, being seen under the glitter of a powerful sun, and in most varied perspective, sometimes with one cross standing out clear and comparatively simple from the rest, and then with two or more of them breaking into and multiplying each other's lines and points of radiance,—presented a strange spectacle of aerial imagery; a golden grove raised high into the air above all the black cans and misformed chimney-pots of modern civilization.*

The bell-tower, however, which was quite separate from the rest of the church, seemed from afar the most artistical of the whole; for, with its general

* See the gilt stamp of the book-cover, carefully prepared from a photograph taken on a subsequent occasion.

spiry form, surmounted by a more moderate cross, it displayed a light airy structure pierced through and through by many little decorated Petra-like windows, finer by degrees as they ascended; and there was over the whole edifice a strange appearance of some ancient and richly-carved ivory, wherein no part of the original surface had been left perfectly bare and barren. Much therefore were we astonished on coming closer to find that this most attractive tower was nothing but brick whitewashed, and probably as modern as the body of the church, but had happily not undergone, like that, the plasterer's smoothing art.

Had we not been in Moskva, we should have examined the architecture of such a church more particularly, but the Kremlé, the Kremlé was what had called us forth, and the hot sun overhead urged us not to waste our powers on small affairs. So on we went, following a downward trending street that must lead, we thought, to some of the city's rivers, from whence we might surely judge of our whereabouts. Thus we wound on, then, in our walk through various shabby and rather long streets, until a massive bulk of a Grecian Temple building, the Imperial Theatre, was reached, with a great square in front of it, and beyond this was a medieval battle-mented wall, surmounted with houses and churches and various golden domes.

“That surely must belong to the Kremlé, or perhaps itself be the Kremlé? Behold, too, the gates ! let us enter there ; for surely we may, when so many persons in every variety of costume are entering and departing by it !”

On either side of that gateway there had appeared to us, in the distance, plots of grass, which though not very green, were delightful to contemplate across the arid, brown sand and gravel of the theatre esplanade. But, alas ! on coming to them, there was not a single blade of grass ; that had been burnt up long ago, and what remained was merely a tangled mat of a peculiar stringy-stemmed, small-leafed, many-seeded weed, *Polygonum aviculare*, a great nuisance to farmers and gardeners in this country, coming up so provokingly wherever a nice bed of earth is just turned over for some special and tender crop ; but evidently having a use in decorating public places in Moskva, where grass, man’s usual vegetable friend and companion, has withered, decayed, and utterly perished, under the thirsty atmosphere, in a sandy soil, and in the midst of suffocating clouds of dust.

The gateway itself was strange and castellated enough for anything in fancy ; but inside it, there were a noisy multitude, and stalls innumerable of Slavonic books with execrably bad prints, coloured and plain, of such subjects as are approved of by the

Russian mind. The machinations of Satan to entrap men's souls were here abundantly displayed ; and many were the victorious fights of Russian soldiers over turbaned Turks.

“ Can this be the Kremle ? True, no doubt, that the Kremle itself is not the palace of the Tsars, but a large walled-in space containing the palace and a host of other buildings as well ; but would the Tsars permit all this trafficking so very close to them ? We looked again at the medieval wall, and doubted, and penetrated further.

It was rather a noisy street that we entered beyond this, but towards the eastern end stood forth a new attraction, a church, and as strange and fantastic a one as we had ever set eyes on.*

There was a great and richly-ornamented gilt cross of course, with its pendent chains ; and this cross was on the top of a dome, equally of course ; but then such a dome, who ever saw the like of it ?—for its surface was stuck all over with, or rather was made up of nothing but projecting quadrangular spikes. Of the body of the church, we do not recollect any very striking feature in form, but the whole of it was painted in green and white, in a sort of grotesque style of gardeners' decorative,

* The church of the Mother of God of Vladimir, or *Tserkov Vladimirsckaya Boji Materi*, erected in 1691, under the dual reign of the youthful Peter the Great and his elder half-brother Ivan.

while the whole building protruded in an anomalous manner from large masses of white brickwork behind; as if it were some sort of architectural mistletoe, once cultivated in these foreign lands by an unknown race of masonic Druids.

A door was open, and a priest's deep-toned voice was chanting as only Greek priest can chant. So we entered, and found the *trapeza*, or fore part of the church, overpoweringly filled with the odour and smoke of burning incense; for the deacon, during his rapid song-prayer, was "incensing," and apparently blessing two little books for as many old women. After the ceremony, these paid him something; "Yes, indeed, a good many kopeiks," said a lady who looked on, and thought she saw a pure invention of priestcraft for obtaining money from the poor; but a further acquaintance with the history and tenets of the Greek Church in Russia, caused her afterwards to correct her first impressions.

As the wreathy films of light-blue incense-smoke gradually died away in the air, the painted interior of the little church began to manifest itself; a comparatively large interior it looked too, and lofty; for it ascended right up into the hedgehog dome, which could scarcely have been of more than skin-thickness, and utilized nearly the whole of the external structure.

Towards the altar end of the church, was the

usual culmination of ornament and decorated holy pictures above and around the "Royal Doors;" and there in one corner, within the rails of the raised altar-platform, lies a bundle of dark drapery: no, it is a poor old woman, prostrating in an agony of prayer. Her forehead is on the ground, and she is clasping her hands against her head, and there is some outpouring of her soul going on before her Maker; a scene which we certainly had not come with any intention of prying into, and which we could not contemplate without respect and reverence. Long, long was the poor old creature there, wrestling in spirit, without any human eye, except our own, to witness; but at last she rose, kissed a variety of objects in token of love and humility, and then departed quietly away, we trust with comfort in her soul.

From hence we entered a southward-leading street, which gradually took us into a populous neighbourhood, noisy and mongery in the extreme; so that at last, when the whole breadth of the street was completely filled with a living, shouting throng, and when the call-boys at the shop doors would almost pull us in by force, to buy, as it appeared, second-hand sheepskin coats, and old furs of every description, it needed no prophet to declare that that could not be the Kremlé, the abode of Russia's mighty Emperor.

Beyond this excessive crowd, a little degree of peace was again secured ; and other churches were seen ; one with five, another with seven, and another with thirteen domes, these last being rich cobalt-blue in colour, with silver garnishings ; but as the surrounding locality was evidently not the Kremlé, we took an early opportunity of leaving by an eastward-leading gateway in the strong battlemented wall on our left.

On emerging from this, lo, there was nothing but open, white town before us, baking in the hot sun ; a strip of grass, and a row of young trees along the side of the wall, had been baked already very effectually. But seating ourselves on the brown herbage, and under the almost leafless trees, as there were no better to be seen, we discussed the steeples, domes, or other features of architecture far and near.

“ Can that great building down there be the Emperor’s palace ? ” we asked ; for sure enough there was a white building of most Brobdignagian size, in that direction, with some pretensions to architecture, in porch, dome, and general arrangement, and with windows innumerable.

Again, we went out into the sun, and necessarily stirred up the dust as we walked on to this huge pile ; but by the time we had reached its entering gate, we had mentally settled that there was a plebeian character about the building, rendering the



PLAN OF THE CENTRE OF MOSKVA CITY.

100 500 1000 2000 3000
Scale of Feet.

A. The Kreml.

- 1 *Uspenski Sobore or Cathedral*
- 2 *Archangelskoi Sobore*
- 3 *Annunciation Church*
- 4 *Spass na Boru Church*
- 5 *Birth of the Virgin Church*
- 6 *Granovitaya Palata*
- 7 *Court Church*
- 8 *Uair the Martyr Church*
- 9 *Constantine and Helen Church*
- 10 *Ivanovskaya Kolokolnya*
- 11 *Twelve Apostles Church*
- 12 *Holy Synod Office*
- 13 *Chudov Monastery*
- 14 *Voznesenskoi Nunnery*
- 15 *Our Saviour's Gate*
- 16 *S^t Nicholas' Gate*
- 17 *Trinity Gate*
- 18 *Borovitskiya Gate*
- 19 *The Secret Gates.*

B. The Kitai Gorod.

- 1 *Pokrovskoi Sobore*
- 2 *Kazanskoi Sobore*
- 3 *Iverskaya Chapel*
- 4-25 *Churches and Monasteries; amongst which, N^o 7, is the Church of the Mother of God of Vladimir, and N^o 15, The Church of the Mother of God of Georgia.*
- 26 *Varvarskiya Gate*
- 27 *Ilyinskiya Gate*
- 28 *Nikolskiya Gate*
- 29 *Voskresenskoi Gate*
- 30 *Monument of Minin and Pozarskii*

august purposes its mere size had at first given the idea of, wholly impossible. And, in fact, it proved afterwards to be the Moskva Foundling Hospital, one of the most numerous tenanted buildings, as well as one of the best managed institutions on the face of the earth.

Government has now much inspection over it, and assists it also with the proceeds of a tax on theatrical representations, balls, masquerades, and playing-cards; but its origin and early progress were mainly owing to private liberality; one noble family, the Demidovs, alone having given upwards of £200,000. There seems, too, to be very generally in the Russian mind, a fine appreciation of charity and true feeling towards woman in the most dangerous and touching period of her terrestrial career; hence the establishment is not only for foundlings properly so called, but is a species of hospital and city of refuge to any woman whatever about to become a mother. No difficulties about admission are ever made; clean rooms, good plain food, and medical attendance are all furnished free, both before and for a certain time after the birth, or until the mother may be able to return with her child, to a perhaps poverty-stricken, winter chilled house.

From this it comes, doubtless in no small measure, that infanticide, exposure of, and barbarous

treatment inflicted on young children, are unknown among the Russians.

Idle ragamuffin children in the streets are also nearly unknown ; for this fine old institution of the citizens of Moskva, is the very *ne plus ultra* of ragged-school-philanthropy glorified ; and though English travellers will call it the Foundling Hospital, the Russians are as obstinate in still adhering to their ancient name, *Vospitatelnii Dom*, or “ House of Education.”

The number of pupils in the similar establishment of St. Petersburg, was roundly given to us, as 13,000, and that of Moskva has been stated to admit 4000 to 5000 new subjects every year. And though many of them die, and many go out early, on growing up, to the simple duties of a life of labour,—yet large numbers both of boys and girls, remain for so much more educational polish and of a high class, that the former have a library, a collection of natural history and philosophical apparatus ; and the latter have, besides their books, pianofortes and globes.

All this, however, was not the Kremlé. The Kremlé ! the Kremlé ! when will it appear ? And how shall we recognize it when we see it ? Such were our thoughts in following down along the dusty road beside the old battlemented wall on our right. It evidently led to some general depression

in the city. Was it the valley of the Moskva? A bluish tone over the buildings beyond the depression, made us believe that it was.

But would getting down into the bottom of the hollow enable us to take a better bird's-eye view of the city? No, surely, but it would still teach us something; for in olden times men erected their palaces and fanes, and eke their castles too, beside flowing waters; witness Westminster Abbey and its Hall, "Rufus' roaring hall," as well as the Tower of London. It was only modern science that planted Buckingham Palace, or a Crystal Palace, beside nothing better than a stagnant pond, if at the latter site there was even that. So we continued toiling on doggedly, until at length we did reach the end of the wall, turned the strong, fat tower that formed its southern termination; and then, oh! in a moment, what a spectacle appeared!

The river,—the flowing river was there no doubt; for though its then water-line was below our level, there evidently was a broad, deep river-channel with strong-built quays of white stone on either side; and further on we could distinguish part of the arches of a handsome horizontal bridge; but it was not that which made us shout; nor the line of the telegraph wires running away into invisible perspective; nor was it the fine open street, making a circular sweep as majestic as the curve of the

river itself; nor was it the commercial look of bustle and activity of telegas innumerable loaded with merchandise; nor yet was it the gallant array of low, yet brilliant-looking, and colonnaded shops on the side opposite to the river, that fired us in an instant with indescribable enthusiasm—but it was, that precisely there, where all these lines converged to a focus, the quay lines, the telegraph wires, the busy street, and the colonnaded warehouses, there stood the Kremlé in all its glory; and we shouted again with joy.

“How did you know it was the Kremlé?”

Well, that is a question we should ourselves have been prepared to discuss to any extent the instant before; and how we were to recognize the external appearance of a building of which we had only seen two small internal bits, pictured; one a little photograph, light-engraved by Mr. Fox Talbot; the other a Bonapartian scene, which might not be true. But all these things were now thrown to the winds, and we knew intuitively, but as firmly as anything we have ever known, that that was the Kremlé before us. Yes! we foreigners knew it as solidly and feelingly as could any Russian who has been born to the hope; and who having heard for half his life by tale and tradition only, of the glories of “Holy Mother Moskva,” “White-stone Moskva,” determines to make one long and perhaps painful pilgrim-

age from his distant abode beyond the Ural Mountains or from the boundaries of the Frozen Sea, that he may behold the Kremle of the old metropolis; the *terema*, or nursing-place, of the virgin liberty of his nation, before he dies.

What was it then we saw? Dear reader, we will try to explain; but pray pardon the difficulty we have had in checking the emotion which a first sight of the Kremle must produce on any mind, from such a point of view. The river, the streeting, the buildings, these, you will remember were all converging before us to a focal point, and there on an eminence nearly directly above that, was a long array of lines and ranges of lordly white buildings, with burning golden domes. Colossal walls with battlemented edge outside; and inside were churches and chapels and convents and palaces and public buildings in every variety of superb architecture. In some parts there seemed to be accumulated whole groves of glittering domes and crosses, and in others we made out spire and turret and tower of half Tahtar, half Gothic build; and these stretched at intervals along the river-line in the dim distance, plainly enclosing a vast and noble area; an elevated hill-top, and buildings precious for their unique history, and their importance in the story of the Slavonian people. Thirty-two churches, and one hundred and seventy chapels, cupolas, and towers.

It is needless now to describe how, being instantly certain of the object before us, we immediately began to look about for the best site for a good stereoscopic view, went up the street and down it, but finally returned to our first spot, as the best of the whole; and therefore we will rather, reader, request you to accompany us from that point along the crescent line of quay and street, the Kremle gradually enlarging before us, until we arrive nearly under its eastern wall, at this hour gratefully in the shade.

Here our road turns off from the river and ascends by the side of the wall; a very broad road it is too, for the flanking ditch which existed at the time of the Frenchmen's invasion, has been filled up, and many of their frozen bodies were tumbled into it when the Russians returned to their defiled sanctuary.*

Now, along the line of cool shadow we find numberless little stalls, chiefly for bread; for the cheap, well-raised, and thoroughly baked, and therefore, tempting-looking Russian loaves. Red-currants were in profusion; apples also. There were not yet, however, any of those peculiar transparent apples, like globes of coloured glass, which Coxe and others

* The church of St. Catherine, just under the "Holy Gates" of the Kremle, had been superbly re-built in 1811, and was in 1812 converted by the French into a great bakery for their army, while the Uspenski was used for a stable.

well describe ; the very perfection of the apple tribe, “the most charming things that ever dangled from a bough,” says a clever lady author, and only producible here in the very centre of the apple-growing region ; for the tree transplanted to other parts of the empire, bears only fruit that is more or less opaque.

As beautiful, though in a different style, was the *kvas*, or national beer, urged upon us by various itinerant boy vendors. Think of an English barrel of ale, and it is nothing of the sort ; and a black bottle of London stout, gives you less notion still ; for though *kvas* has been abused by foreigners as a most barbarous compound, and even a savage uncivilized sort of beer, yet did true *kvas* now show as a beautiful transparent liquid, exquisitely rosy-red in colour, and frothing like champagne ; qualities which the magnificent two-gallon crystal-glass jugs in which it was carried about, exhibited to admirable perfection.

Close to the spot too, was an interesting series of fish-shops, their doors opening on the river ; and their interiors, most delectable abodes of coolness. We went into several of them, but not a single denizen of salt water was to be seen. In their absence the sweet waters of the continent, brought forth abundantly, and its produce was not only fresh, but alive and hearty, in large flat vessels of water, each

of which had a rock of ice to melt down into it gradually; while the general depth was such, as just to make the rather deep-formed fish, such as roach and dace, turn up somewhat of their silvery sides to sparkle in the cool grotto.

Yes indeed, *roach* and *dace*, such homely-sounding names, were the fish, but of such a size as would in England's midland counties create quite a ferment amongst the anglers. And on the banks of dear Bedford's Ousy stream, what a running have we not witnessed of the little boys in the common, when a single dace, not half the size of one of these, had been successfully landed by a piscatory old gentleman; himself quite a Triton among the minnows! and when he gravely asserted, that the makers of imitation pearls would pay three shillings per ounce for dace-scales, we considered the captor one of the richest of men.

It was pleasant also to see the perch, regular English perch, they appeared to us, glorious in their ambitious attempts to imitate the adornment of their tropical congeners; and as genuine pike as English troller ever ran out his line for; also gudgeon, tench, ruffe, and carp.

The most important sight, nevertheless, as well from its novelty as its intrinsic excellence, was the sterlit; a small member of the sturgeon family, looking precisely like one of them in miniature; or, for British

natives, like a smooth silvery-sided dog-fish, but without the teeth, and adorned along the sides with rows of osteological medallions ; bringing back to one's mind, the all-bony faces of some of the early fish that swam in the seas of the red sandstone period.

But that is a long way to go back for a simile ; and when we heard, from all sides in Russia, men's praises of the sterlit, or sterliad, prepared in any and every manner, and especially when made into soup ; for verily it is such soup, that though you have it day by day in travelling along the Volga, for weeks, you think even then that it can never come too often ;—why, we looked on those external bony tubercles as badges from a real universal exhibition, eternal prize-medals, typifying that here is a fish combining all excellencies, the external beauty of the mackerel, the flavour of salmon, the whiteness of turbot, and the soup-making qualities of the oyster.

The main habitat of this fish appears to be in the Volga and the rivers east of it, whereunto you must travel, if you would have it in all perfection ; but now that pisciculture is so much attended to in this country, it would be an object worthy the ambition of any such society to endeavour to transplant to the west, this choicest gift of nature, confined as yet to the centre only of the large double continent formed by Europe and Asia combined.

The fecundity of the rivers there, the Volga, with

its eastern affluents, and the Ural, almost surpasses belief. In some lands nature spreads gold over the surface to attract men and civilization; here, she filled the waters with food. Here, accordingly, the Tahtars, in the times of their power, established their great, though ephemeral cities; as Sarai, the world-adorned residence of Batu Khan; while along the Aktubar, where, for eighty-five versts there are continuous Tahtar ruins, each petty village now draws annually 15,000 rubles' worth of fish; and Haxthausen relates that a merchant, at one haul, took 16,000 Russian poods weight, which, if true, is equal to 576,000 pounds.

Along the Ural river, the fishing is more valuable still, two million rubles' worth being produced a year, and the chief part of it is furnished by that important family of sturgeon and sterlit of which we know so little. Sturgeon indeed are occasionally taken in the mouths of British rivers, and zoologists have made it easy for us to distinguish and talk about them by the name of *Chondropterygi*, i. e. *cartilaginous-skeletoned* fish, like the sharks, but with free gills like ordinary fish. Yet our British examples evidently can have had little connection with those of the Caspian sea for many a long year, if indeed, as it would justly seem, the Caspian has not its own peculiar representatives of the tribe.

The Russians, at all events, according to Lyall,

distinguish — 1st, the *beluga*, or great sturgeon, *Accipenser huso* ; 2nd, the osetre, or sturgeon, *Accipenser sturio* ; 3rd, sevryuga, or sevring, *Accipenser stellatus* ; and 4th, the lovely little sterliad, or sterlit, *Accipenser ruthenus*. The last we have already spoken of in its multitudinous delicacy ; but the first, scissors ! could they but be prevailed on, when once introduced, not to forget our shores,—for they spend part of their time in fresh, and part in salt water,—how worth a whole country's while to try their introduction !

When you are on any of the Volga streams, in the heart of a pastoral country, and full fifteen hundred miles from the Caspian ; it is indeed a splendid thing to see drawn forth, not a salmon merely, but a fish nearly as big as a full-grown crocodile ; a single fish which affords to all who are far and near a continued feast for days ; like the slaying of an elephant in Sitchuana Land.

After looking through two English cyclopædias, we have only found the weight attained by *Accipenser huso* to be given there as high as five hundred pounds ; indeed, having stated so much in one place, the editor, alarmed at the improbable look of it, *i.e.* a river-fish of such a weight, says in another page, that they, the *Husos*, “have been known to reach the great weight of one, two, or three, and even four hundred pounds !” Russian books, however, those

books which West Europeans will persist in not looking into, must teach, we should suspect, very different facts in certain branches of natural history ; for Lyall, p. 277, mentions incidentally having seen in the winter market of Moskva, a *beluga* which weighed no less than seventy poods, or 2520 pounds.

CHAPTER IV.

MORE OF THE KREMLE.

September 3rd.

ON September the 3rd, the sun again rose hotly over Moskva, and, on our looking out into the air, behold! there was "*another* fine hay-making day." As genuinely bright it was too, thirsty and utterly sunshiny, as if the scene had been laid in India during the dry season, and not in the capital of Muscovia.

Quickly we mounted on a droshky, and drove right away to our first-view point of the Kremle, between the Vospitatelnii Dom, and the southern termination of the old castellated town wall, with the strong round towers. There the camera was duly erected and focussed; and the while that the picture was silently impressing itself on the sensitive plate, through a small, or 0·2-inch aperture, in order that definition at least should be secured, we looked down the long perspective of the river quay, gazing through its distance on the hundred clustering

golden domes of the Kremlé, and wondered whether any pictures at all, in the photographic sense, would be obtained. The sun was shining brightly, no doubt, and each golden dome was reflecting its own small, yet intense and pungent imitation of heaven's bright orb ; and the buildings were all white, three-fourths turned towards the light, and exquisitely grouped ; what could have been better for a photograph ? But then the dust ! the whole air was filled with this, as with a dense suffocating yellow haze.

Above and beyond the Kremlé, the appearance of the sky was pictorially something awful, with the saffron hue on high deepening away to livid purple below ; and all this at ten A.M., on a bright morning, without a cloud proper in the sky. Had some great earthquake rent all the plain in the distance, and was this the dust and ruin of a whole country ascending to heaven ? Would crowds of frightened peasants, and shrieking women and children, be presently rushing into the city to tell how their hearths and homes were no more, and they alone had escaped ? "From the character of the soil, arid and argillaceous," says Lyall, a long resident in Russia, "it is not difficult to explain that Moskva, in dry weather, during summer and autumn, is often enveloped in clouds of dust. Part of this dust, being light, is easily put in motion by the horses' feet and the wheels of the carriages, even when

there is no wind, and remains for some time suspended in the air ; but, should there happen to be a gentle breeze from any quarter, immense clouds are everywhere formed. Sometimes the Kremle is obscurely visible, through a thick mist, or is even quite concealed. Sometimes even Moskva itself is thus buried in volumes of dust."

After taking two pictures here, we ascended by the old city wall once again, and entering by the Ilyinskiya gate, for that of Barbara was forbidden to the public on account of an expected visit of the Emperor, descended again inside the rampart until we brought the double-bladed camera to bear only just across the breadth of the street, right upon the church of "the Mother of God in Georgia." A quaint old structure is this, and edifying as to the recent history of Russian ecclesiastical architecture.

Five golden domes has this church, just like the modern one of "the Birth of the Virgin Mary" in the Beloi Gorod (p. 402) ; but whereas there they were scattered and broken like small, contemptible chimney-pots over the general roof, here, in this antique structure before us, behold the artistical skill with which they have been massed together as one general, glorious whole of gleaming gold, with a degree of Correggiosity of which Correggio himself might have been proud.

The crosses over the domes are peculiar ; the cen-

tral and highest one marvellous in its decorations and gigantic in size ; the others as large, but perfectly plain, as of simple carpenter's work, yet withal strictly Grecian-Church orthodox, with the short head-bar, the long arm-bar, and the diagonal foot-bar, for they say one of our Saviour's feet was nailed higher than the other. The whole of these domes are of an agreeable bulbous form, being drawn in with great beauty at their base, where they stand on towers formed of circular colonnades of pillars, and these again on a general pyramidal mass, constructed in three stories of cavern-mouthed arches or grottoes, emblematical of the days of persecution and dwellings in caves, with the Eastern Church ; below these are ornamental friezes, then columned spaces with windows, then the crosses and golden domes and pilastered turrets of two low wings of the general edifice, then a series of roofs with tiles like dragons' scales ; and finally more columns and windows, before we arrive in our descending survey at the ground entrance.

Hence it may be well imagined that there is here a structure of vast height in proportion to its breadth ; between two and three times probably, while the modern church above alluded to is not even so high as it is broad, and must be remarkably deficient in its stock of wholesome air to serve for the respiration of the faithful who crowd its floor. But, in " the

Mother of God of Georgia," as in our own Gothic cathedrals of the thirteenth century, these things had been most beneficently cared for; and we subsequently, on visiting it, found the lofty interior pure, grand, and solemn; dark somewhat, but rich, and crowded with paintings mounted upon paintings, old and deeply ruby-coloured, up to the highest dome.

Again we entered the droshky and drove away with the camera, to get that comparatively close and scrutinizing view of the Kremlé from the Moskva-retskoi bridge, which Sagoskin and many other writers have applauded so from their souls, whether viewing it by the light of the moon or the stronger radiance of day's burning orb. The bridge itself has a level roadway, delightful no doubt for the endless streams of horses and vehicles ever dashing bravely along it, but prejudicial to photography; for being constructed of timber, it is in a state of continual though minute vibration. It is only this upperwork, however, that is of wood, the supporting piers being extraordinary examples of massive masonry, with long, colossal, knife-like abutments, to break into the ice floes of early spring. Besides them, too, the bridge has extensive piers on either shore, with landing-stairs and other conveniences, all in solid worked stone. Indeed, looking at all these works and at the smooth-built walls which form the banks and partly the bed of the river all along in this

neighbourhood (would that our Thames had such !), you could not have thought that building-stone is so rare in this immediate locality as it really is, none of any note being found nearer than Miatchkovo or Vintrinka, and no great deal even there.

In summer the river Moskva has only a mean depth of seven feet, with a breadth of about three hundred and fifty ; but in spring the floods rise twenty-seven, sometimes thirty-two feet, then filling up to its very brim the deep masonried channel, which in September looks grand but objectless. The notion had long existed here, they say, that it was impossible to build a permanent bridge capable of withstanding the sudden rise of the water in April, when the melted ice and snow of Russia's broad alluvial plains rush impetuously down into the valley of the Moskva by a thousand tributary channels. But by dint of the massiveness of the masonry above described, and by the engineering device of opening an anastomosing branch of the river, which during the press of waters allows part of them to leave the main channel before arriving at the bridge, and then to join it again below that structure after flowing round southward through a special canal,—the difficulty has thus far been practically overcome.

On the Moskvaveretskoi side-stairs, then, we mounted our camera ; and pointing it across the deep summer gulf of the stream, directed it full on

the south-east corner of the Kremlé wall,—a great favourite, it would appear, and deservedly so, with local artists; for while in front you have a richly-decorated array of battlements and a Tahtar, or rather anti-Tahtar, tower of exquisite workmanship, standing forth in intense sunlight, there is a cyclopean portion of the wall running off nearly northwards from the tower, which is thrown about noonday into a grand shadow, thereby giving an unexpected majesty and force of effect to the otherwise too-bright picture.

Further off, several towers are seen rising at intervals along the line of wall, with their half-Gothic, half-Tahtar spires, showing strange, banner-like weather-cocks or Imperial double-headed eagles, steep sloping roofs with bright-green, leaf-shaped tiling, and galleries of columns and arches ever slightly varying from each other in their many tiers; while immediately within this general enclosure are the golden decorations of more purely ecclesiastical buildings. And then to give distance to all this concentration of magnificence crowning the hilly ground behind, there is a range of low-storied but architecturally regular shops immediately in front and on the very brink of the river; and below them again are the deep stone stairs and landing-stages, and the placid water floating boats of quaint unvarnished build.

Again we turned about, some 30° or so in azimuth, towards the west, and enfiladed in our view all the chiefest golden glories of the Kremlé ; there was the Palace, the Bolshoi Dvoretz with the Imperial flag flying, showing the Emperor to be there at that moment ; and there were the several holy cathedrals of the Kremlé, each with its separate congregation of golden domes, and the lofty towers of the Ivan Veliki serving as belfries for all them ; and with Tahtar defence-castles and battlemented ramparts in front of and below them.

Gazing, as we then did, from so close by, the sheen of those golden hemispheres in such number and size, and placed just opposite to the sun and to our eyes, struck us as something more truly gorgeous than we had ever expected to behold upon earth. In our resulting photograph, as might be anticipated, the metallic surfaces lost much of their effect by a process where the richest yellow tells only as dull black ; but the amount of actual sunshine reflected from them on this occasion went far to overpower their chemically untoward colour, and there is accordingly, even in the small stereogram, a concentrated reflection of light on the various buildings, which at once bespeaks a new effect in architecture. Glorious and masculine looks the gold, but more beautiful still, the modest, pearl-like feminine domes of silver. One of these Kremlé churches, with a

central large dome of gold, surrounded with four smaller domes of silver, is, so photographed—though we say it who should not say it—one of the most exquisite things conceivable in the way of expression of the physical nature of surfaces by the pencil of light that we have ever seen ; but it requires a compound achromatic microscope, directed on a glass picture, to bring out all the qualities.

And how, and under what circumstances, were these refinements of photography obtained ? Why, on the open landing-place at the corner of the Moskvaretskoi bridge, where, behind us was a constant turmoil of carts and carriages, and about us a most oppressive crowd of inquisitive peasants,—vulgar Russian mouzhiks, with bearded faces, tunicked summer dresses, and feet and legs swathed and bound about with cloths, birch-bark, and twine, like ancient Scythians. Yet, to be just with them, in spite of all their curiosity, they were decorous and orderly ; and when duly signed so to do, they seated themselves with most imperturbable and respectful gravity all along the parapet wall, out of reach of the camera's far-spreading legs. There they discussed solemnly its silent proceedings, enabling us to hear with advantage the untutored utterance of their language,—deep, full, and soft,—a language, compared with which all those of Western Europe fail to satisfy ; for to it the German is boorish and paltry, though to

us it may be resonant of ponderous learning ; the Spanish may more approach it in fullness, but is stilted and stiff ; Italian may equal it in liquid flow and adaptation to amorous discourse, but fails in serving, like Russian, for a good, hearty, and honest expression of feeling and description of work from one manly soul to another.

When vowel sounds are so eminently characteristic of Russian, it would be absurd to flatter one's own love of country by pretending that *English* came nearest to the language whose tones we admired ; but when we looked, as we did for more than twenty minutes, at all the broad, honest faces that were watching our camera, and saw their open-heartedness, their love of jolly jokes, yet moral restraint, their quiet firmness of purpose, solidity of build, and no little strength of intellect,—we felt that English would come to those men far more naturally than French. Strange indeed it is, that we have only to cross the Channel,—“from Dover to Calais 'tis twenty-two miles,” says the sailor's old song,—and we come at once on the Gallic race ; so different from ourselves in all their physical characteristics ; thin, sallow, nervous, excitable, and never able to acquire our language with naturalness ; yet, push on through that country, through Germany, through Poland, through sixteen hundred miles, and then in Russia you find men stout, brawny, and rosy-faced, as firm, stolid

perhaps, and self-reliant as any John Bull can possibly be. Such are the uneducated; and when a young, educated Russian learns English, why you find he speaks it so like an Englishman that you cannot tell the difference. Listen, however, to his French; you will like it, for it has a fullness and steadiness which are charming to a British ear; but it is not the language of Paris in tone or in manner, and differs from that perhaps even rather more than does our famous "British French."

From this place of study of voices and physiognomies it was but a moderate walk over the bridge to touch the eastern Kremle wall, and make towards its principal entrance-gate; but who could pass by what greets one just outside that, viz. the most extraordinary expression for a church which un-Russian eyes have ever rested on! By evening light looking "like a couching dragon," says a good and sober German author, while a Frenchman considers it a most preposterous construction of over-coloured *bon-bons*, made up with an infusion of Indian pagodas. English authors have been fond also of calling attention to the phenomenon, usually under the name of "the Church of St. Basil." This title is however only "founded on truth," for though there may be, and indeed is, such a church in the general structure, still it is only one of twenty-one churches which are there coexistent, the whole together being known

to the natives as Pokrovskoi Sobore, *i.e.* "Cathedral of the Protection."

Yet "Sobore" cannot literally be interpreted "Cathedral," for see practically what it means here. There is a building of very moderate size, *i.e.* circumscribed probably within one hundred and fifty feet square on the ground, agreeably spiry in form, with nearly a dozen domes grouped round a central summit, like a close clustering grove of young pine-trees. There is harmony amongst them decidedly; yet with variety infinite. One dome is wreathed to the right, another to the left; one decorated with triangular spikes, another with quadrilateral; and in short, everywhere, even amongst seeming repetitions, there are charming refinements of variations; over and above the strangest little intercalated windows and doors and open passages peeping out in unexpected places,—side by side though, it is true, with lamentable paintings of Southern plants.

As usual, there was happily no difficulty in gaining admittance, and at the very entrance we witnessed a scene. Near the shrine of a saint, constructed in massy silver and decorated with pearls and precious stones, were several miserable old women, who gladly paid a few kopeiks to a most unclerical-looking man with a red nose, for the unspeakable satisfaction of having, one after the other, for a short time, a heavy iron chain, with a big key

attached, put round their necks. The opportunity seemed precious to them; and bowing their heads under the weight of the chain, and bearing up the key with difficulty in their trembling, wrinkled hands, they went through some prayers, if not with earnest devotion, at least with much faith, and eager, anxious zeal.

From this room, half-cell, half-church, we found, pushing on boldly by divers and sundry labyrinthine passages, access from one of the little churches into another and another and another, and then ascending upstairs penetrated and circulated in and about, inside and out, until we had looked into every place of worship under every dome,—each fitted up completely with ikonostas, holy doors, amvone, and analogion, besides sacred pictures, and huge painted effigies looking down from the interior of the roof.

The titles of each of the coalesced churches are thus given by Lyall:—

“In the upper story of the church, that dedicated to—

1. The Entry of Jesus Christ into Jerusalem.
2. The Life-giving Trinity.
3. Gregory the Great, of Armenia.
4. The Three Patriarchs of Constantinople, Alexander, Joann, and the New Paul (never consecrated).
5. Kiprian and Justin.
6. Alexander Svirskii.
7. Varleiam Hutunskii.

8. The Church of Nicolai the Miracle-worker.
9. The Virgin Pheodosiya.

“ In the ground story, that dedicated to—

10. Vasilii Blajennii, or Vasilii the Blessed. •
11. The Birth of the Virgin Mary.
12. The Martyr Parascovya Pianitsa.
13. The Great Vasilii.
14. John the Precursor.
15. All Saints.
16. The Epiphany.
17. Sergii the Miracle-worker.
18. The Apostle Adronik.
19. A pridel or adjoining chapel.
20. Mariya Yegipetskiya.
21. Pokrove.”

The whole forming the Pokrovskoi Sobore, a most original, subtle, and in some things beautiful work of art, and no unworthy monument for Ivan Vassilievitch II. to have erected as a mark of his conquest over Kazan, and Russia's definite triumph over her ancient Tahtar oppressors. Those were wild times, even now little known ; and few of our authors have failed to describe how on the completion of the building the monarch whom they delight to call “ Ivan the Terrible ” summoned into his presence the architect, already looking forward to his promised rich reward ; and addressing to him a friendly, encouraging question, couched precisely in such and such words, and receiving a pleasant answer in such and such other words, each of which is given exactly, and

to the effect that the artist *could* now erect him another church more extraordinary still,—immediately ordered the poor man's eyes to be put out, in order that his already erected Pokrovskoi Sobore might remain for ever, without compeer, the most extraordinary building in the world. Oh ! worthy deed for an Ivan the Terrible !

There could of course be no doubting the story, when the *ipsissima verba* on either side were given by German historians ; and it was a delightful tale for Western Europeans to tell against their Eastern cousins. Only see the gusto with which M. Kohl works it up in his inimitable book, and compels us to see how all the tortuous passages, and unexpected explosions into domes of the building, were merely counterparts of the volcanic labyrinths and crater furnaces of the Tsarish tyrant's brain ; and how could he therefore do anything less than take out the eyes of his too-successful architect ?

Alas ! however, for the foundation of the story ; for it has been traced up to " Olearius," a Danish ambassador, but by birth a *Holsteiner*, who hastily visited the country in 1636, in an unkindly frame of mind, did not understand the language, and on his return promulgated amongst other things the now proved libel of Russian priests giving to their dead, material passports to heaven. Nor is the statement to be traced beyond him ; and, while Lyall assures

us that all his own long researches and inquiries in Moskva have only ascertained that not even the name of the architect is now known there, we find from the inscription stones in the building itself, that in commencing it, Ivan acted in association with the holy Metropolitan, and died before it was finished: so that most certainly not on the occasion of its being finished could the architect, whoever he was, have exchanged words with the deceased Ivan, or have had his eyes either put out or put in by him.

The following, too, is the style of the spirit in which the building was erected, as even yet testified to by a sculptured inscription:—"By the blessing of God, by the mercy of the Most Holy Virgin Mary, and by the prayers of all the saints, by order of the most pious Tsar and Great-Duke of all Russia, Ivan Vassilievitch, and of his Eminence Makarii, the Metropolitan, in the year 7062 (1554), was begun the construction of the Church of the Pokrove of the Most Holy Mother of God, and also on the same foundation, nine churches."

And then comes this subsequent addition:—"By order of the Tsar and Great-Duke Phedor Ivannovitch, in the year 1588 (?), were added yet other eight churches in this edifice."*

In truth, we have now opened classical and, to the Russians, holy ground about Pokrovskoi Sobore; for

* Lyall, p. 253.

here, close by, is the *Lobnoye Mesto*, or place of a skull, where the chief outward ceremonies of the Russian Church used to take place as long as it possessed a patriarch ; and where, in that confused whirlwind period of the country's history, between the close of Rurik's direct dynasty and the establishment of that of the Romanovs, the people were often called together by patriotic nobles to decide between opposite usurpers, or arm for the defence of their state against Polish leagues and Sarmatian treachery.

Immediately too, in front, is the Kremlé enclosure, and besides other towers there is a quaint and picturesque little thing standing on the top of the wall, and consisting of four dumpy yet shapely columns supporting a conical roof-spire. This is the *Tsar-skaya Bashnya*, or the Tsar's Tower, from whence the monarchs were accustomed to overlook the gatherings of their people on great occasions ; and in it was also once hung the chief spoil of Novgorod, the famous *vetchevoi kolokol*, of that republican city. Often, after its transplantation, it called the faithful of Moskva together for aid of their state ; but when, in blinded tumult, during the plague of 1770, the people rose in almost insurrection, and with the tocsin of the bell called up excited crowds who rushed to the Donskoi Sanctuary, and murdered the worthy Archbishop Ambrosius,—then the Imperial mandate went forth that the bell should be taken down and suffer

the extremest punishment that can befall its species, viz. to have its tongue taken out, *i.e.* its clapper removed. So in that dumb and mutilated condition the famous *vetchevoi* or *nabatnii kolokol* has remained ever since. (See Map 2.)

But chiefest of all the towers on this side is that of the gateway of our Saviour, the *Spaskiya Vorotui*. The gateway is a long sort of tunnelled archway through the broad base of the building, and the latter, though strong and massive below, rises up like a Gothic cathedral through successive tiers of lighter and more aerial arches and pillars, to the final spire which aims ambitiously at heaven. There are holy pictures fixed over either entrance, and with lamps ever burning hauled up in front of them ; and each person who enters, high or low, rich or poor, on foot or on horseback, has to take off his hat, and keep it off for as long as he is going through the gateway.

For the reason of this custom, many fanciful stories have been told by strangers, with the effect generally of showing what insatiable miracle-mongers the Russians must be ; and it is not at all improbable that some few miraculous-like ideas may have entered the minds of untutored peasants, and led them to believe that special providences again and again preserved this gateway during Tahtar and French invasion. But the national reason appears to be

simply that this is the *eastern* gate of the Kremle,—a holy enclosure, or rather a “Sobore,” Cathedral if you will, of a higher order than any that is comprised under one roof, and therefore not to be treated with less reverence than an ordinary church, where every Russian invariably takes off his cap on entering. No doubt there is also a soldier here, always on guard, to see that every passenger fulfils the law : and Dr. Clarke describes, with the greatest disgust, how when he tried forcibly to push through with his hat on, he received a series of continually increasing warnings which he was obliged at last to obey.

But then, would not Dr. Clarke, in one of the college chapels of his own Cambridge, have been offended at seeing a layman similarly pushing in with his hat on ? and would he not probably in such case have brought a portion of that same authority to bear on the stranger, which Hugh Miller experienced when gazing for the first time in his life on the interior of York Minster ? And if New Testament authority can be found for visitors’ hats off in an English church, the text must be equally applicable to the Russian *sobores* : the only difficulty is, in our immediately realizing all that the Kremle appears and fulfils to, and for, the nation which has raised it, and which worships here after a thousand years with zeal still young, and faith that faints not away.

We waited a little while to see the rule of the hats

in force, and found not a single exception; the ladies indeed adhered to the Pauline precept of covered heads, but submissively drooped their parasols. Following this example therefore, my wife and self passed in too, and found that we had immediately entered the sanctuary of the nation. A fine esplanade did certainly stretch away before us, flat, extensive, and raised about a hundred and fifty feet above the level of the river; but it was bordered by lofty churches, tombs, and palaces. On the left-hand, and rather low, is the Church of Constantine and Helen, Emperor and Empress of Rome and Constantinople, peculiarly regarded throughout the East for their noble deeds in the early days of Christianity. On the right is the Voznesenskii Nunnery, with its several churches,—that “of the great martyr Catherine,” “of the Joy of all the Afflicted,” “the martyr conqueror and miracle-worker George,” and others, amongst which Voznesenskii Church contains the tombs of all the wives and daughters of the Tsars, from the Great-Duchess Eudokia, who founded the building on the death of her brave husband, Dmitrii Donskoi, in 1329, down to the Tsarina Paraskevya Ivanovna in 1731.

The exterior was rebuilt in 1721, in a cheap plaster imitation of Milanese Gothic, and is by no means pleasing.

Further on are the several buildings of the Chudov

Monastery, with its six churches and residence of the archbishop, in rather a more ancient style, with many outside paintings on the plaster; and beyond this, standing forth on the plain like another Mount Athos, is the lofty Ivanovskaya belfry, and its shapely tall tower of Ivan Veliki, golden-domed and two hundred and seventy feet high. We push forward however past this; care not at present for the fine view of the city which stretches southward from our elevated steppe, but think only how we can gain access to those further churches we see westward, with the goodliest golden domes of the whole, and resting against the palace itself.

A high ornamental iron railing appeared to defend this congregation of *sobores* from the comparatively less sacred portion of the Kremle arena, but there was an open gate. Should we venture? No; look at the soldiers on guard there; what are they there for, but to keep foreigners from coming too close to the Emperor's own apartments? Here, too, are more guards and a soldiers' guard-house.

There were; and when we looked into the windows, how pleased we were to see the same quiet industrial scene that we had frequently witnessed upon passing by at the cellar windows of some barracks of St. Petersburg. In place of curling their mustachios and talking over Zouave deeds of rapine, murder, and sack of towns, these Muscovite soldiers off duty were

either stitching away like tailors, or shoemaking, or carpentering, as if they had not a moment to spare.

Then my wife called attention to peasant-looking men entering the fearful enclosure, and with bundles ! "Oh ! but they must be servants of the Palace." No ! not a bit of it ; for there is one who has opened his parcel, and it is a stall of apples for sale, and there are some more with lollypops and loaves of bread.

And sure enough, so it was. Though the dread Tsar was at home, the public had full and unstinted right to enter in anywhere, even under his very windows, and an old coat or a big parcel was no objection to the wearer and carrier thereof ; and you might also munch at an apple, if you liked. So profiting by the admirable amount of trust and confidence placed in a faithful and affectionate people, *we* entered within the enclosure also ; and after a little hesitation about the very Byzantine-looking churches on the left, we crossed over the square to a similar and older-looking church on the right.

It was old, and yet it was not all old. The lower parts of the walls were newly whitewashed, and the plaster had evidently been abundantly renewed, so that there was little of the original surface left ; but the upper part, immediately under the very projecting metal eaves, revelled in sacred figure paintings which could not have been modern, and the five golden domes of exquisite contour looked of almost any antique date.

These were the more ancient parts of the structure, and we had been so fortunate as to alight at once on the oldest building in Moskva,—the Uspenski Sobore, or Cathedral of the Ascension. (See Map 2.)

Already had it begun to be apparent that signs of architectural age are not the same in Central Russia as in Western Europe, or indeed in most other parts of the world. There, in the West, you look to the slow wearing effects of wind and rain in removing the finer ornamentation from sculptured blocks ; but in Moskva, the terrific frosts of winter, followed immediately by the raging heats of summer, would make short work of any builder's stone, even the best ; and immortality is consequently tried to be secured there, by that material which most easily admits of renewal and touching-up every spring of its life.

Bright and new therefore, though rather misshapen, and in the style so far of an elderly lady's newly covered cotton umbrella, looked the white plaster walls of the Uspenski Sobore as we approached ; but on entering within the portals, what a grand and truly antique appearance had the interior ! gold, and dark pictures on every side, and the floor paved with slabs of polished steel, thick ones too, for here and there at the entering-points to certain shrines, they had been worn into deep furrows by the feet of millions of pilgrims.

This church is the scene of the crowning of Rus-

sia's emperors. Their place of subsequent worshipping, is one of the two churches on the opposite side of the square,—that of the Annunciation, in contact with the palace, roofed with gilded copper, paved with patchwork of agate, jasper, and other ornamental stones, and bedaubed as to its walls with Bible portraits or ideas of the day of judgment; and finally, the imperial burial-place is the church just east of this last one,—the *Archangelskoi Sobore*.

Here at least are buried all the Tsars from the fourteenth century down to the time of Peter the Great. Prostrate they lie, each in his own canopied sepulchre, on the open floor of the church, a melancholy and thought-inspiring range; tolerably understandable, until we come to the child Dmitrii, the murdered of Uglitch by his inscrutable half-uncle Boris Godunov, whose stormy, semi-usurped reign and latter end set us thinking on our own crooked-back Richard and the Princes in the Tower. True, very true, that modern researches have set Richard's character in a much fairer light than he had usually enjoyed in popular estimation, and show him to have been a most able politician, fully understanding and well inclined to allow the people their full swing of constitutional freedom; yet, *cæteris paribus*, precisely the same can be said of Boris Godunov, one of the ablest sovereigns that ever ascended the throne of Russia, and precisely understanding the genius of his nation.

So much must in justice be accorded him ; but then comes that murder of the Prince between him and the throne ! And yet, who can positively say that Boris murdered him, or that he was murdered by any one, when the whole nation afterwards accepted for a time the rule of a man calling himself the supposed once murdered boy ?

A truce however to such speculations on a first visit. We had found out the Kremle for ourselves, and knew now how to indulge in its treasures, but must leave them for awhile, to attend to something partaking of domestic duties. And it was this : the sun was still flaring and flashing in a cloudless sky, the air was fiery with heat, and our unhappy four-windowed room at the hotel was more of an oven than ever ; what then would become of all our stock of dry (Hill Norris's, of Birmingham) collodion plates ? We had not the means with us of developing them immediately after exposure, and feared that the invisible impression might not remain on the sensitive surface until such future time as we should be able to get them once more safe into Professor Savitch's cool observatory on the banks of the Neva,—if they were to continue in the meanwhile baking in this most cruel manner day after day.

So away we went, right under the Emperor's windows, on the southern side of his palace, and out of the Kremle by another magnificent gateway to

the south-west, the *Borovitskiya*; and then through the Kremlé gardens, laid out on the western side of that cathedral in the old valley of the Neglinnaya, something like the West Princes Street Gardens in the ancient North Loch under Edinburgh Castle and St. Margaret's chapel.

But these Moskva summer gardens! oh, what gardens they were! arranged once perhaps in lawn and shrubbery style, but now, in these dry heats, the grass had all evaporated; the lilac-bushes were shrivelled, browned, and covered with dust; and the only really green things were some painted boards, which workmen were erecting as supports for lamps in an illumination shortly to take place.

In vain they told us at M. Vilchov's hotel, that every house in Moskva was then equally hot, that the heat was something such as had never been known before, that there was no escaping from it—we persisted in our intention of trying a change; and away we sped to a French bookseller's, from whom we had bought a trifle the day before, to make inquiries. These led us to further inquiries from house to house, and street to street, realizing by degrees to our minds, the astonishing preponderance of shops for the nobility. *Modes et Robes* was a sign that at last we got to detest, and Парижъ Городъ, or Paris city, was something we never wished to see again; but at hair-dressers', or jewellers', or knick-knackery

shops, it was always reappearing, and Фотографія was seldom long absent.

Another local feature, was the extensive employment of cast-iron for staircases, both inside and out. Stone is scarce, and wood unsafe ; but there are recent ironworks established about Moskva, and their owners' taste in designing seems to equal their skill in casting ; for we saw corkscrew staircases and large flights of stairs, and extensive landing-places, light, strong, and exceedingly beautiful, in a species of minute open work, that reminded one of the more delicate carvings of the Alhambra.

At last we gave up the notion of a private lodging, and took a room in the Hôtel de Russie—a room with windows only at one end, so that only on that one side could the sun get at the photographic plates, to warm them up ; and an hotel it was, where you were not expected to take anything but your room ; no *table d'hôte*, no breakfast, no supper, no any meal regular or irregular.

Oh ! glorious liberty ; for now we sallied out to see what we could buy for ourselves, and what were the modes of economizing, yet living well in Moskva. Our first result, however, had nearly finished us. We had determined not to return without such and such supplies, and had we been in St. Petersburg, should have got them all in seven minutes ; but here we went walking vainly on and on ; and in place of

a good baker, and an honest grocer, we could see nothing but those infernal *Modes et Robes*, or *Coiffeur et Perruquier*, or something of that most unsatisfactory nature to a hungry man. We should indeed, under this tormenting provocation, have grown at last, perhaps fearfully misanthropic ; but that we occasionally passed a trahtier, or tea-shop, where, at long ranges of open windows, burly isvostchiks, and country mouzhiks were sitting, engaged in gently sipping bright-coloured tea out of gilt porcelain cups ; just as if the improvement which *Punch* prophesied one year in his Almanac, as about to take place in the manners of the London cabmen, had descended instead on their brethren of Moskva.

From a distant, half-private baker's shop we did at last get bread ; and being Russian bread it was super-excellent ; while an active boy at a cheese-shop, instead of running a steel taster into the heart of every cheese and spoiling it, shaved us off Vauxhall slices from every variety which he had ; and proved to our great satisfaction, that a certain light-yellow Russian cheese, full of little holes, almost like well raised bread, is a very commendable article ; and another boy demonstrated, that very fair Crimean wine can be had for thirty-five kopeiks, a trifle more than one shilling a bottle.

Rendered thus secure for awhile, we relaxed our cares once again, and in the late evening twilight

entered several churches. Service was going on in every one of them, horologions were being sung in deep-toned voices, and clouds of incense were rolling through the buildings. How thoughtless we were at the time ; for this, which astonished us so much then, was the pious care of the inhabitants of Moskva, to make more than preparation for Sunday, by actually beginning its religious services on Saturday night.

CHAPTER V.

SUNDAY IN MOSKVA.

September 4.

THE clashing and clanging of bells innumerable, plainly announced the nature of the day, Sunday ; and of the city, “ Beloved holy Mother Moskva.”

To say that she contains three hundred churches, may be thought to be stretching the truth in order to deal in large round numbers ; and if a man inclined to exactness begins to count the steeples, or rather domes, that look at first sight so numerous on every side, it is a long time before an arithmetical sum of even one hundred is obtained. But then we must bear in mind what constitutes a church in this country, not necessarily the same that does with us, but often merely an apartment, provided it be furnished with divisions or decorations representing the several regions of *Narthex*, *Trapeza*, *Naos*, *Amvone*, with *Ikonostas*, *Royal-doors*, *Analogion*, the *Holy Table* or

altar, from which a *peristerion*, or dove, is suspended as a symbol of the Holy Ghost; the *Prothesis*, or table of proposition on which the elements are placed and prepared before consecration; and the *Diakonikon* or vestry; and as long as these are each and all represented, on whatever scale, the apartment forms a church; and any number of such churches may be grouped under a single roof, and all be supplied with a single neighbouring, but isolated bell-tower. This species of plurality, too, seems to be indulged in so frequently, if not invariably, that he would be a bold person who would maintain that Moskva, instead of only three hundred churches, has not reached that stage of ecclesiastical illustriousness, so desired by her devoutest children, viz. to possess her *sorok sorokof*, or forty times forty, of churches.

In the Kremle arena we found so much church-going activity of large multitudes prevailing, that you would not have thought it a wall-enclosed, monarch-containing place. We entered with one of the principal streams, into the churches of the Voznesenskoi Nunnery. Service was performing in several of them, by priests; but there was a decided tendency to press on by crowded passages to a further apartment, from whence exquisite singing proceeded at intervals; so resigning ourselves to the middle of the current, we were at last pushed up

some steps under a large archway, in the midst of an intense cram ; and then behold the interior of the Voznesenskii Cathedral, nearly filled with its nuns, mournfully and touchingly robed in their black cloaks, black velvet peaked caps, and long gossamer veils.

They were arranged in ranks through the *naos* of the church, reading the lessons and singing the hymns, while a secular priest on the *amvone* performed the weightier matters of the service ; and near him on the right knelt the *Hegumena*, or abbess, attended by a neat little girl of eight or nine years old, dressed up primly like a model of a nun, and behaving herself quite in order. We wished we could say as much for the old lady, at least in appearance, for she was as cross as two sticks, and was every now and then coming forward from her place and having long wranglings with an assistant priest, about the wax candles ; and sometimes when he could not please her at all, either by lighting them or putting them out, and she seemed advancing with evident intent to box his impudent ears for him, he retreated behind the *ikonostas* where no woman in Russia dare to follow.

This acrid bye-play, quite put us out of tune for a time ; and looking about at random we noticed, firstly, that over and above pictures, as usual, the nuns had a great solid figure of the crucified Saviour on the cross, as large as life, and coloured like

life, it was the first and it proved the last sculptured image we ever saw in a Russian church ; and secondly, that the priest who was performing the service, and dressed in all the magnificent garments *phelonion*, *orarion*, *epitrachelion*, and *stoicharion*, had a countenance about as sensible as a barber's block. His forehead was not much more than three-quarters of an inch high, but his hair was oiled, curled, and more than two feet long, and he was as ridiculously proud of it as a peacock, or one of the youngest shop-boys of the aforementioned barber or hair-dresser.

By degrees, however, the measured reading and the fervent singing of the nuns, expelled all other thoughts ; and at times in the service some amongst them assisted a poor aged sister, who looked as if she must be a hundred years old, to join in it. One supported her on either side, and she seemed most truly in earnest with prayer and praise. She was a very interesting sight, for though her countenance was the very type of great age, no harsh feelings or ignoble passions had left their traces there ; the complexion was pale, but pure, with innumerable wrinkles, but none of them deep ; and her eyes still lustrous, though sunk.

Amongst the congregation of on-lookers too, there were many peasant women, whose countenances at that moment, insensibly to themselves, almost trans-

figured in their earnest devotion, showed that Russia is the land to come to for examples of religious beauty, deep feeling, and intense mental aspiration; with such women, we need not be surprised at the hosts of female martyrs and female saints in the Russian calendar, or the depth of religious feeling instilled age after age into the minds of Russia's children.

The number of nuns here maintained is thirty, and there are perhaps also a few probationers; but these are by no means encouraged. Peter the Great admitted that some persons might have an internal vocation to such a way of life, but he refused to let any woman bind herself for a nun by vow, before the age of fifty. If an earlier application was made, the party might, under some circumstances, be received as a novice, but was specially under the supervision of the Hegumena, and was free to return to the world if her opinions changed. And even when the appointed years had been reached at last, the Hegumena was bound to question the suppliant closely and solemnly.

“Wherefore dost thou come hither, O my sister; and what dost thou desire by prostrating thyself before this holy altar and this holy society?”

“I desire the ascetic life, reverend Mother.”

“Truly thou hast chosen a good and blessed work, if thou continuest therein; but good works

are maintained with labour and difficulty. Dost thou come to the Lord of thy own free will?"

"Yes, God being my helper, reverend Mother."

"Art thou urged by no force or compulsion?"

"No, reverend Mother."

"Wilt thou continue in the conventual life, and the practice of religious exercises, to thy latest breath?"

"Yes, God being my helper, reverend Mother."

"Wilt thou endure all the tribulations and austerity of the conventual life till death, for the sake of the kingdom of heaven?"

"Yes, God being my helper, reverend Mother."

And not until the suppliant is thus, and still further searched, is she allowed to bind herself by an oath which may never be broken.

Past the Chudov Monastery, and the Ivan belfry, and through flocks of gentle blue doves that seemed quite fearless of man, we wandered on again to contemplate the Uspenski Sobore, which, with its battered, though exquisitely figured golden domes, its bruised walls, and windows like loopholes for archers to shoot out of, appeared to us, alike the simplest and grandest of all the buildings on the Kremlé Hill; deeply too must it be bound up with the very heart-strings of the Russian nation; for not only to this is it, that every orthodox subject turns, but it is to it, that the fondest thoughts of the distant

Siberian exile flow, and even some of the dissenters consider it as holy to them also, and to be the scene of their future triumphs. Thus, according to Haxthausen, the sect of the Korabliks, or the faithful boat of believers in a backsliding and wicked ocean, from their present habitat, far away in the East, chant with wild enthusiasm,—

“ Hold fast, ye mariners ;
Let not the ship go down in the storm.
The Holy Spirit is with us !
Fear not the breakers, fear not the storm !
Our Father and Christ is with us !
He will come ! He will appear !
He will sound the great bell of Uspenski !
He will collect all the true believers together !
He will plant masts that will not fall !
He will set sails that will not rend !
He will give us a rudder that will steer us safely ! ”

And each morning of the Easter week, representatives of this and most of the other sects of the Russian Church, meet here in front of the Uspenski, to discuss and argue with the laity of the orthodox church, their respective tenets of belief.

On entering the cathedral to-day, we found the public services of the morning over ; but casual worshippers were still dropping in. Sometimes wealthy-looking persons, but more generally the poorest of the poor, touching their external habiliments, yet strong in faith. As to his bare head,

PLAN of the CITY OF MOSKVA.

Blue, denotes water.

Red, the houses burnt in 1812.

- A. The Kremlé.
- B. Kitai Gorod.
- C. Beloi Gorod.
- D. Zemlianoi Gorod.
- E. Slobodi or Suburbs.
- 1. Presnenskiya Prudi.
- 2. Neglinaya Prudi.
- 3. Krasnaya Prudi.



each man had strictly fulfilled the precept which he thought conscientiously and scripturally lay upon him, "Thou shalt not round the corners of thy head, neither shalt thou mar the corners of thy beard." With their long hair therefore and flowing robes, they were a strange sight as they prostrated themselves on the steel-paved floor, then crossing themselves went forward humbly to kiss the frame of the portrait of our Saviour, painted as it is said by St. Luke;* and then retired once more to their distant prostrations; or unrolled some carefully-preserved wax-candle to light up before a special shrine, as a symbol of their burning faith.

There has been doubt expressed, whether these uneducated men really understand the language in which the liturgy is read to them by their priests; seeing that it is a very ancient form of the Slavonian. But a little case which occurred when Dr. Clarke was in this very church, proves beyond doubt, that they both understand and watch its enunciation with the greatest attention. He (Dr. Clarke) was present at one of the Easter services, when the whole floor of the church was crowded, and being

* This St. Luke appears to have been an early monk of Constantinople, much given to painting sacred pictures, in the extremest Byzantine style. The Evangelist St. Luke, no one can doubt, who has read the learned and *thorough* book of Mr. James Smith, of Jordan Hill, on the "Voyage of St. Paul," must have been a medical officer in the naval service of Rome.

recognized by Platon, the officiating archbishop,—that dignitary, over and above his ordinary benediction, added in Latin, *pax vobiscum*, for the special benefit of his Cambridge visitor ; but there was instantly a serious murmur amongst the stalwart mouzhiks, because their high-priest had introduced something into their service which they did not understand.

Not by any means entirely is excess of fervour and depth of devotion confined to the poorer orders of the Russian Church ; and here came an example before our eyes. A tall comely-looking gentleman, of between forty and fifty years of age, dressed in French or English style, and looking with his high bearing and thoughtful head, like some *chargé d'affaires*, or some chief official in the civil diplomatic line, placed himself at a certain distance west of the centre of the floor, but where he could just see upward into part of the painted interior of the central dome ; and then, looking up with all his soul in his eyes, he crossed himself fervently, and after that reverentially bowed ; again he lifted up his eyes and crossed himself slowly, and bowed down as before ; again he lifted up his eyes, performed the sign of the cross, and prostrated himself, touching the floor with his forehead ; again, and in fact we do not know how many times, he went on without a moment's cessation. He seemed, socially, to be quite alone in the church ; others came and went

without attending to him, or he to them. Several times we turned back, and saw him still going through the same forms; and at the end of half an hour we left him without prospect of termination; at each repetition he was looking up with deep intensity of feeling, neglecting no portion of the ceremony of signing the cross, and then bowing down to more than half an obeisance.

Though the Uspenski is now the oldest building in the city, Moskva itself had a much earlier foundation, in 1147 they say, and its beginning was quite a lay affair; an occasion of love profane rather than sacred, accompanied with a slaughtering of relatives by relatives, backwards and forwards, such as might well have graced the early annals of Scottish Highland chiefs.

The then monarch of Russia, Yury II., lived at Kiev, and in one of his progresses saw a very nice house and grounds watered by the Moskva, Yausa, and Neglinaya; so he had the proprietor Kutchko Ivanovitch forthwith killed and thrown into a pond; while he married his own son Andrei to the deceased's daughter Ulita, and then began to erect a fort and village on this very promising clearing. After a year, Yury died, and was succeeded in his kingdom by Andrei; but he was soon after killed by his wife, in league with her two brothers, to

revenge their common father Kutchko's death. Whereupon Vsevolode, Andrei's brother, took up arms, killed Ulita and the two young Kutchkos, and then possessed the disputed jewel, Moskva, in peace.

But there was no peace to the nation at large, and least of all with the wide-spread scions of the reigning family. They had become too prosperous, and were running riot with the politics of Russia, cutting up the country into little rival monarchies for every son and every cousin, or introducing Polish auxiliaries to curb true Russian interests; until the main branch had, for safety, to retreat north-eastward from Kiev and the treacherous, shifty inhabitants of the Ukraine, to the surer population of Vladimir and the banks of the Volga. Still however the various descendants of Rurik, suicidally for the country, went on contending with each other, while they revelled in abundance; until suddenly, in 1235, the terrific Tahtar invasion fell upon them, and in a moment all was night. Never had other European power to withstand, before or since, so fearful an oppression, or so mighty a crushing weight; and when we come to ascertain its real proportions, we are lost in admiration at the astonishing capacities for passive resistance, and biding its time, which enabled Russia to preserve its nationality during all the dire infliction, and to employ and occupy the energies of the invading nation so completely, as to

prevent it from passing on further and overwhelming Western Europe.

With truth and picturesque force, that great eruption of the Tahtars, and their rapid conquests, are compared by Gibbon "to the primitive convulsions of Nature, which have agitated and altered the surface of the globe;" and Voltaire has called our European battles, mere skirmishes, compared to some of those awful slaughters which have desolated the extensive plains of Asia.

How difficult is it in general, modern reports of Government Commissioners on competitive examinations notwithstanding, to detect the beginning of a great existency! And little thought the Grand-Dukes of Russia, in the beginning of the thirteenth century, that any danger was likely to accrue to them, from a small chieftain of a humble shepherd tribe near the frontiers of China. He could neither read nor write, and in his early years was defeated by some petty neighbours and compelled to fly into the wilderness. But there it was that his internal qualities of mind became better known to the few who were still about him, and they found to their intense satisfaction a man whom they could really trust as a ruler.

His vow to share with his followers the sweets and bitters of life, was followed by the partition of all his property among them, and by entire abnegation of self-interest in any small affairs of sordid

gain. He could be depended on therefore to reward his friends. And then, when his first victory was won, in recovery of his paternal rights, and when he caused no less than "seventy giant cauldrons to be placed on the fire, and seventy of the most guilty rebels to be cast headlong into the boiling water," he was talked of from one encampment to another over the world-wide steppes as a man who would not trifle with rebellion, and would by no means shirk taking on himself the full responsibility of punishing his enemies. These qualities alone, might have merely established him as a successful robber-captain; but when he added thereto a most strict and severe execution of justice in every social relation, and a high ideal of God, "the fiercest of men become mild and just in their intercourse with each other," and whole nations flocked eagerly to his rule, acknowledging in Temougin, their general, leader, and master, Zinghiz Khan.*

His earlier wars after this period, ever successful and strengthening to his throne, were with China, and might have continued there, but for the perfidy of the Mahomedan Sultan of Carisme, in slaying a caravan of Tahtar ambassadors and merchants. In vain Zinghiz demanded reparation. He repeated his demands; but was treated with contemptuous silence by the learned and literary followers of the

* Gibbon.

Prophet ; being looked upon by them as a heathen, and an outcast, because he belonged to no large and recognized religious system, or to any that was furnished with an organized priesthood and a formal ritual. Nevertheless, in his own untutored manner he prayed and fasted on this occasion for three days and three nights on a mountain alone, and then descended to make the final appeal of his cause to the judgment of God and his sword. Seven hundred thousand Moguls and Tahtars formed the number of warrior-horsemen who had been by this time habituated to collect under the standard of Zinghiz and his four sons, and they now advanced joyfully to make war for the right. "In the vast plains that extend to the north of Sihon or Jaxartes, they were encountered by four hundred thousand soldiers of the Sultan ; and in the first battle, which was suspended by the night, one hundred and sixty thousand Carismians were slain."

On this scale began the marshalling and surging of Asiatic nations, for that great diluvial wave of war-fire, that was presently to burst the bounds of the Ural, and roll destroyingly over the plains of Russia. For, on Zinghiz's death in 1227, his four chief sons, Toushi, the great huntsman ; Zagatai, the judge ; Octai, the minister ; and Tuli, the general ; showed that they not only inherited their father's genius, but that they were content to combine their

powers for a common cause, and the building up of a national house.

First under this dread partnership the northern empire of China was subverted; and then came the turn of the West.* “Fifteen hundred thousand Moguls and Tahtars,” writes Gibbon, “were inscribed on the military roll; of these the great Khan selected a third, which he entrusted to the command of his nephew Batou, the son of Tuli. After a festival of forty days, Batou set forwards on this great expedition; and such was the speed and ardour of his innumerable squadrons, that, in less than six years, they had measured a line of ninety degrees of longitude, a fourth part of the circumference of the globe. The great rivers of Asia and Europe, the Volga and Kama, the Don and Borysthenes, the Vistula and Danube, they either swam with their horses, or passed on the ice, or traversed in leathern boats, which followed the camp, and transported their waggons and artillery. They spread from Livonia to the Black Sea, and Moskva and Kiev were reduced to ashes. The Tahtars ravaged with equal fury the countries which they hoped to possess, and those which they were hastening to leave. From the permanent conquest of Russia, they made a deadly, though transient, inroad into the heart of Poland, and as far as the borders

* Gibbon, vol. xi. p. 419.

of Germany. The whole country north of the Danube was lost in a day, and depopulated in a summer."

Well might all the Latin world "be darkened by this cloud of savage hostility." The Pope sent a mission to appease the conquerors, but was informed that he too would be included in the universal destruction, unless he came a suppliant on his knees to the victorious tents of the shepherd kings. The Emperor of Germany, mistrusting the ability of his subjects to defend their much-loved fatherland, sent the most urgent solicitations for assistance to all the nations behind him, France, Spain, and England, not forgetting "*cruenta Hybernia, agilis Wallia, et palustris Scotia.*"

But in the midst of all this wreck and confusion of nations, and the doleful litanies ascending on all sides, "from the fury of the Tahtars (or, as the Christians erroneously spelt it to make it more terrible, Tartars, from the Latin Tartarus), good Lord deliver us,"—Batu Khan, his ideas of empire satisfied, suddenly returned on his steps, from the Danube to the Volga, and knew the West no more. There the Frank nations insulted his retreat, as a victory of their own; but unhappily they forgot to ask anything about the unfortunate Russians, who were left under the invader's power; and it was not until more than three centuries after, when the Russians had at length by their own unaided exer-

tions overcome their oppressors, that Western travellers rediscovered the nation, and most naïvely described their astonishment at finding a numerous Christian and European people, *whom they had not been in the habit of hearing about*; but who were now very desirable acquaintances, and withal decidedly profitable to trade with.

No European nation then ever gave Russia the smallest assistance in her efforts to recover her liberty; and she was left to bear all the burden and be the salvation of the West, though it might and actually did grind down her soul in tribulation and despair. Yet dreadful as that long night must have been, we do believe that, with all its misfortunes, it was to Russia the most important and salutary epoch in her whole history. For herein did she expiate her former sins and follies, and in the depth of her distress call feelingly on her God, rewarded at the last on apprehending her true line of policy, as necessary to her climate, country, and people.

To come back, however, once more to the simple facts: on Batu's return from his waste of the regions of Attila in 1242, he fixed his abode on the Ak-tuba, a branch of the Lower Volga, where at his all-compelling word the imperial city of Serai rose instantly for his service in the wilderness of the steppe. How the necessary concentration of wealth took place so quickly, an admirable French picture

by Vernier, in Chopin's 'Russie' (vol. i. p. 104), may too well suggest. Not many actual houses were probably built at first, though they had whole waggon-loads of gold, for the chief part of these hardy warriors preferred to continue their ancient manners, feasting on mare's-milk, and dwelling in tents; whence their residence was called "the Golden *Ordu*," most atrociously turned long since by London writers into "Golden Horde;" though the true meaning of *ordu* is *camp*, or the "Tahtars of the Golden Camp;" and that a camp so large as to be capable of sheltering with ease the most powerful and numerous nation of its day.

From these new head-quarters of Serai, then, with Astrakan in the south, and Kazan in the north, did the terrible Batu Khan at frequent intervals with his myriads of horsemen scour the whole of Russia and keep all her chiefs in the lowliest subjection. His sons after him continued his policy, and even increased his power; while in 1258, under Berke Khan, when the Tahtars were converted to the Mohamedan religion, they added to their political persecutions the zeal of new religionists. Then too it was that the Poles, Christians though they might pretend to be, were delighted to keep on good terms with the Eastern invaders, by killing and slaughtering on the western side any of the chiefs or people of Russia who might otherwise have

made head in those parts against the national oppression, plundering them at the same time for their own particular benefit.

Poor Russia seems indeed to have been considered about this period, *i.e.* the end of the thirteenth and beginning of the fourteenth centuries, as fair game for any disreputable chieftains. She was deprived of her means of defence by the dominant Tahtars, who looked only to collecting their annual tribute, and never cared what devastations were made amongst their forced vassals in the north-west by the Swedes and Teutonic Knights of the Sword, and in the south-west by that mushroom nation of unknown origin, the Lithuanians, who became afterwards amalgamated with the Poles. The acme of her sufferings was probably in 1314, on the accession of the boy Usbeg, at the age of thirteen, to the throne of the Golden Camp. Like the young Earl of Crawford, the Scottish 'Tiger Earl,' "who, when scarcely beyond the years of boyhood, did *not* think it better to content himself with fighting cocks on Fastern's-eve, than to be laying schemes for massacring men on Palm Sunday,"—"Marry," said the Prince, "if such be the juvenile policy of Lindsay, he will be a merciful ruler some ten or twelve years hence;" like him, and perhaps beyond him too for early thought and premature passion, Usbeg began by promptly beheading a Grand-Duke of Russia, be-

cause he was not quite quick enough in paying up his taxes ; and when, some years afterwards, the overbearing Tahtar garrison at Tver had driven the people thereabouts to acts of resistance,—the youthful Khan made the most of that opportunity to get up a great army and come smashing and slaying far and wide through the subject country.

Then it must have been that the tears of Russia were most abundantly poured. Already they had confessed the sins and wickedness that had stained the capitals of Kiev and Vladimir, founded in times of pride and supercilious prosperity ; and now, in an age of sorrow and misery, they desired on the site of Moskva, where as yet as a nation they had done little more than suffer evil from oppressors, to commence a new capital in all humility and contrition of spirit ; and the first step was, to mark their hitherto mere ordinary country town with the most beautiful temple they could erect for the honour of God. To this important, and under the circumstances, rather dangerous work, the Metropolitan of Vladimir, St. Peter, continually urged his Prince, Ivan Danilovitch ; contending that thereby a seed of safety would be sown to the nation, and that a grand and flourishing imperial tree would in after-times grow on the spot.

On the 9th of August accordingly, in 1326, amidst an immense concourse of those faithful Russians who had never given up their nationality either to Tah-

tars or to Poles, the foundation-stone of the Uspen-ski Sobore was laid on the Kremlé hill. The Metropolitan, with his own hands, built a tomb for himself in the walls. In the succeeding winter he died, and over his remains, in the following year, the church of his desires and prophecies was both completed and consecrated.

A new era hereupon commenced for the oppressed nation, and Moskva was henceforward adopted as the capital, and the place of residence for their Grand-Dukes. Moreover, like as they now daily observed the waters of three rivers to combine into one under their cathedral hill, so did the people now learn to drop and lose all minor private differences in regard to the general weal. Hence, with Moskva for a capital, loyalty and combination became the national watchwords. The sovereign was loved and obeyed as a father, but was obeyed also, and with a more implicit degree of confidence, as being the choice and representation of the *Mir*, "the majority."

Anglo-Saxon peoples have been rightly adjudged to attach vastly greater importance in their governmental affairs to the idea of a majority than any of the Romanic or Celtic nations, but we doubt if they have an equally exalted belief of its over-riding power to what the Russians have.

"The *Mir*," they say in their peasant homes, "is great,
The neck and shoulders of the *Mir* are broad ;

Throw everything on the Mir, it will carry all.
The Mir sighs and the rock is rent asunder ;
The Mir sobs, and it re-echoes in the forest.
A thread of the Mir becomes a shirt for the naked.

God alone directs the Mir.

No one in the world can separate from the Mir.
What belongs to the Mir, belongs also to the mother's little son.
What is decided by the Mir must come to pass.
The Mir is answerable for the country's defence."*

More than ever, too, did they in their misfortune cling to their sacred Christian faith ; so that even the Tahtars discovered that the only way to rule them was through means of concessions to their priests ; and the Prince of Lithuania, a Pagan himself, yet found it expedient to choose for his viceroys in the conquered Russian provinces, such of his officers as had embraced the Russian faith.

Silently but surely did these principles affect and become amalgamated with the hearts of all the people, and that a faithful, trustworthy people, on whom their chiefs could always rely ; for, whenever the latter thought an opportunity had arrived, the former were never backward in collecting their number, and exposing life and property in battle with the common enemy.

It was not until 1380 that a grand occasion offered for putting into execution the new policy, and it must have been by incredible exertions that a subjected country suddenly accumulated an army of two hun-

* Haxthausen's ' Russia.'

dred thousand men. With these the Grand-Duke Dmitrii advanced to the Don, but there they were met by their two powerful oppressors, Tahtars combined with Lithuanians, to the number, according to Count Krazinski, of above five hundred thousand. So vigorous was the fight on the Russian side, that the enemy gave way, leaving two hundred thousand of their number on the glorious field of Koulikov; but with grief unspeakable, Dmitrii found that his own troops had been reduced to forty thousand. Neither had he more to recruit from, so that when Taktamish Khan returned in 1382 with his usual countless hosts, he carried everything before him, attacked and burned Moskva, putting all the inhabitants to the sword, and laying waste the country far and wide.

The Tahtars seemed indeed just at this period to redouble from every quarter, and presently a new, immortal spirit of a conqueror appeared amongst them in the person of Timour, to carry Asiatic devastation through half the earth. Nevertheless, the Russians by no means lost heart; and while they agreed again to bide their time, they crowned their Prince with the simple, but in their estimation glorious, epithet of “Donskoi;” for a victory it was in itself which he had taught them to gain at Koulikov on the Don, though other circumstances had prevented its then freeing them from Tahtar bondage.

Anxiously yet must they have looked to the career of Timour, for a greater man amongst their enemies had never appeared since the days of Zinghiz Khan himself; and indeed, in Western Europe, his name now bulks much the larger of the two. Born to a small chieftainship, and driven from it into the desert with defeat and loss in his earlier years, Timour's course began only too much like that of Zinghiz; but there the similitude terminates; for, living a hundred and fifty years later in both the world's history and the civilization of his people, he was born a Mohamedan, and could early read and write,—nay, not only so, but he was even overfond of literature, and was egregiously smitten with the paltry idea of living in books, and those his own books, as a universal conqueror. With this view, he kept obsequious scribes constantly about him, recording his doings in the most perfect grammar; and instead of imitating Zinghiz, who was a Philip of Macedon with something of Alexander's genius, he rather became half a Julius Cæsar, and half a certain British ex-Chancellor who shall be nameless; or again, in place of being the silent, acting being that Napoleon Bonaparte was when climbing the tree, he became the inveterate talker about himself that the same man appeared when the empire was melting away beneath him.

With all this amount of book-learning, or march

of intellect, Timour should have been more mild and merciful than his great Tahtar prototype ; but, unhappily, there his religion came in with a baneful influence ; for the servile priesthood of a long-established state-church, was ever ready to absolve the head of government from sins which even his own conscience must have condemned. And herein it came that his captured cities, one after the other, witnessed unpitied the cruel erection of pyramids of freshly decapitated human heads ; or saw thousands of living men built with lime into a colossal pillar, with only their faces projecting ; in that manner offering a feast of myriads of human eyes to all the hawks of heaven.

In his advance to the battle of Angora, with 800,000 horsemen, and in the rapid evolutions of that dreadful day, when Timour so utterly overthrew the great Bajazet, "The Lightning," with all his 400,000 veteran troops, we trace a master in the art of war ; but we look in vain for the builder-up, or strengthener of a permanent nationality. And when he had been content—after his destructive campaign in the north, and reported discovery therein of a country, where, in summer there was no *night*—to order his priests to give him absolution from any necessity for again offering *evening* prayer, we are somewhat prepared for the religious idea which closed his life ; viz. that having spilt so much of the blood

of the faithful (Mohamedans) in his past war, he must go now and cancel that, by slaughtering a greater number of infidel Chinese.

Had Timour chosen, how he might have strengthened Tahtar institutions, and established his nation as a civilized power on the earth ! But, in his insatiable egotism and narrow selfish desire to have each telling deed (and these are unhappily always the battles, never the comforting the afflicted) instantly set down in a book, he warred with those immediately in his way, friends and fellow-countrymen though they might be, rather than with his natural enemies. So notwithstanding that Russians did see the dread Tamerlane enter their country in 1391, it was to attack and ruin his own cousin, and their fiendish oppressor Taktamish Khan. In vain this chief of the Golden Camp brought forth his thousands of warriors, rich in historic prestige of conquest ; vain it was, for after two preliminary defeats, his army was well nigh annihilated on the Kama, in 1395 ; the haughty Taktamish being "taught to fly," while his capital, Serai, was burned to the ground, and the fame of Kazan departed for ever.

Many, nevertheless, were the powerful Tahtar chiefs who now came forward, and struggled for the vacant khanship, while they endeavoured still to keep Russia in subjection ; and Moskva was even yet occasionally attacked and burned by them. But

their wasted power ebbed by degrees ; and after 1450, Russia ceased to send her princes any more to take the oath of vassalage at Serai, or Kazan ; while she watched with joy, how the Tahtar power gradually broke up from day to day through internal jealousies. The Grand-Duke, too, Ivan Vassilievitch I., profiting well by the weakness of the enemy, often defeated him in the field ; and then in undisturbed security, surrounded and strengthened the Kremlé of Moskva with stone and brick walls and towers ; while at last, in 1472, in token of their then recovered freedom, he began, amidst great rejoicings of all his people, to rebuild the sacred Uspenski Sobore, which had latterly fallen into sad disrepair. The work was progressing well, when in May, 1474, the whole fell in with a tremendous crash. A Bolognese architect, named Aristotle, was then brought over from Italy, and he, with little further alterations than improved receipts for bricks and mortar, recommenced the native-designed idea of a church, and in 1479 it stood complete, *i.e.* the present building ; “wonderful for the contemporaries,” says a Russian historian, “worthy of our admiration, and to be placed amongst the most striking works of art, on account of its firm foundation, its arrangement, its proportions, and its magnitude.”

The latter, however, is not much more than a hundred and fifty feet in any direction ; but the

painting of the interior, which took place in 1515, that was the wonderful affair. "Why, we see all heaven," said the Duke, Bishops, and Boyars on entering to witness the improvements; and when we are told that there are two hundred and forty-nine full-lengths, and two thousand and sixty-six half-lengths and heads, many of them larger than life, and one or two in the interior of the domes where the face alone is nine feet long and proportionably broad, we may well allow these honest men to have been truly astonished.

No less surprised were we in a different manner, on coming out of the church, after our long reverie, to find the Kremlé esplanade all alive with an intensely Russian population, while lines of Russian troops extended as far as we could see. In at a low entrance-door of the Ivan Veliki bell-tower, streams of broad-bearded, long-coated, big-booted men were entering, and we followed them. At the head of the first flight of stairs there was rather an unseemly disturbance with some young clerical men in black, who appeared to be doorkeepers taking money; but this difficulty once got over easily for ourselves, we ascended with a steady respectable stream of long and often grey-bearded men, leaving the altercation going on below, and arrived at length at the top of the last stair, about two hundred feet from the ground, and there debouched into the highest bell-gallery.

The white walls of the tower, with their gilded dome above them, still raised themselves over our heads, but there was neither ladder nor scaffolding to ascend higher, and the view was already as fine as mortal eye need desire.

More passing strange, perhaps, than positively beautiful, were the numerous swelling golden spheres that seemed boiling up immediately close around and below, viz. five of the Uspenski Sobore, five of the Archangelskoi, five of the Dvunadeseti Apostolov, nine of the Annunciation, eleven of our Saviour behind the Golden Rail, and many others, with their forests of crosses and chains, now all seen in acute foreshortening from above. They were seen also inappropriately as to illumination, for instead of the splendid flashing of brilliant gold, which we should have had the previous morning, there was this day a murky and cloudy sky, under which the domes appeared vast, pale, moony sort of masses, without vigour or effect. Further in the distance, where the great city spread out over the horizon, and presented her many churches and belfries more in elevation and landscape view,—we could admire the panorama of Moskva, more in terms of the panoramas of ordinary cities ; though even there and then, in the extremest distance, the golden heads of the different towers would persist in glittering with a strange enchantment. (See Maps 2 and 3.)

In some directions in the suburbs, we fancied descending wisps of purple-coloured rain could be traced; and before long some drops began to fall about us through the heavy, sultry air. It was at this time we noticed that a large body of soldiers, stationed near the Granovitaya Palata, and hitherto standing as still as the building itself, were suddenly ordered into the barrack-room, and having piled their arms, in they went. In a few minutes they were out again in their serried ranks, but after a while, more rain came, and while we retreated under one of the goodly sized bells of the Ivanovskaya Kolokolnya, the soldiers were ordered into their barrack-room as before. A very pretty sight it was, too, to look down from a great height, and see the square mass of parallel rows of men, suddenly break up into a shapeless crowd, but at the same instant almost, resolve itself into a serpent-like figure, which worked itself with one easy double writhe, in at a small door, and lo! it was all gone.

This feat we saw performed even a third time, and then began to think, what is all this conflict of orders for? On one side the soldiers are not to be kept unnecessarily exposed to the rain; and on the other there is a great desire to have them under arms for some important occasion still to take place. Look, too, how persistently the crowds of people remain standing on the esplanade, getting wet

through,—and the principal mass of soldiers there, has not stirred yet. And then observe the passage prepared from the palace, and the extra crowd immediately about that.

Can the Emperor be about to come forth? Even so it soon proved; for presently the hoarse cheers of thousands of burly voices floated up to us in the air, and in the midst of a courtly party, ladies as well as officers, who issued from the palace on foot, was the Emperor, followed by a special aide-de-camp. But more especially still was he distinguished, though we were looking down almost on the top of his head, by a walk, or a stride, that not even a red-hot republican could have refused to confess was something most eminently and magnificently imperial.

Then began the review, and whoever desires to see one well, let him be on the Ivan Veliki bell-tower, when the Tsar is with his troops below. We certainly never before enjoyed so complete an opportunity, and without having tried for or expected it in any degree. The rain indeed came on again, but neither Tsar nor subjects paid the smallest attention to it.

The soldiers seemed all of one regiment, in dark-green frock-coats and white trousers, and about fourteen hundred strong. After going through a variety of manœuvres the Tsar went personally along all the

ranks, and appeared to select certain men for honourable distinction ; and then began the final scene. The miniature army of trusty warriors had already marched past in long line, in double and triple ranks, and in a dense Bonapartean column ; but now some stronghold had to be attacked, and a series of companies one after the other were to devote themselves to the storm. At the instant when the first of them broke away, and with a cheer for their Emperor, went forward at a run, with bayonets fixed and in charging position,—a corner of the gaping, admiring crowd of honest peasants and thriving shopkeepers was standing just across their intended course. Each man in this inopportune collection shrank and turned partly round on observing the soldiers' cold steel and quick advance, but hesitated what to do, or where to go ; and then, dear reader, if you could only have seen the policemen ! they sprang forward from their various single positions along the line, and collecting themselves like staghounds launched with concentrated force on the offending corner, and oh ! the kicks wherewith they kicked out in front. We never saw a knot of men dispersed so like magic, and by the time the soldiers came up, there was bare and open ground to pass over ; with good reason too, when all of the mouzhiks at that offending angle, had fled at once ; some only just out

of the required space ; but others, ran as if for dear life, and never stopped to breathe or turn round until they had reached the final railings that bound the Kremle esplanade far to the south.

With the soldiers, however, the review-movements went on as if nothing had occurred, or was occurring, to excite laughter about them ; and regularly at intervals of so many seconds from each other, one rank separated from the rest, cheered for their Emperor, and with a continually increasing speed got up into a splendid long-stepped run, with levelled bayonets and rank as regular as when walking. In that manner they charged some invisible obstacle and vanished from our view behind a corner of the tower. To us it appeared very much as if they had been swallowed up in destruction ; while nevertheless each successive front row of the residual body charged on, when its turn arrived, in the same direction ; and the faithful men's wild hurrah, rose always touchingly in the air just an instant before they seemed to rush on their fate.

We sought no more sights that evening, but still could not help delaying for a few minutes at a later hour, to witness the manner of worshipping at the Iverskaya (Iberian, *i.e.* Georgian) Mother of God ;*

* In Russian, *Chasovnya Iverskoi Bojici Materi*. This edifice stands against the pillar between the arches of the gates of the Resurrection on the north side, and of course in the Beloi Gorod.—*Lyall*, p. 313.

a proof beyond anything else, that the idea of a cathedral in this country is peculiar. In the West, and in England itself, we have heard a cathedral defined, as "a building so large, that nine-tenths of it are perfectly useless;" enormous size, therefore, they say, characterizes it there, and so long as it has that size, the congregation may consist merely of a modicum of old men and women and one or two strangers come to hear the music; but it is a cathedral, and has thousands and tens of thousands of pounds a year spent lavishly in its support.

In Russia, on the other hand, it is the esteemed sacredness of the building, quite independent of its size, which either establishes it as a cathedral, or indicates the number of worshippers. Here accordingly, was a little chapel, not much more than twelve feet square, yet from its superior sanctity was it visited during the day, by far greater numbers than usually attend St. Paul's in London. Every moment that we remained there, morning, noon, or night, some fresh arrivals were taking place, fine ladies in crinoline and men in sheepskins, Government officers and pilgrims weary of foot.*

* "Now, supposing only four persons to present themselves every minute before this picture (and sometimes fifty at the same instant may be observed opposite its shrine), no less a number than ten thousand eight hundred and eighty persons will be found to visit it in the short space of twelve hours."—*E. D. Clarke's Travels*, vol. i. p. 98, 4th ed.

They had sometimes to begin their kneeling and crossing a long way off, but gradually worked their way forward as the earlier arrivals departed, prostrating themselves in full when near the doorway, or happily within it; and then at length before the picture of the Iverskaya Mother, they breathed out with meek and lowly lips, their own soul-prompted, mind-expressed prayer; on what precise basis of Christian belief, let us wait for some quiet opportunity of ascertaining from themselves.

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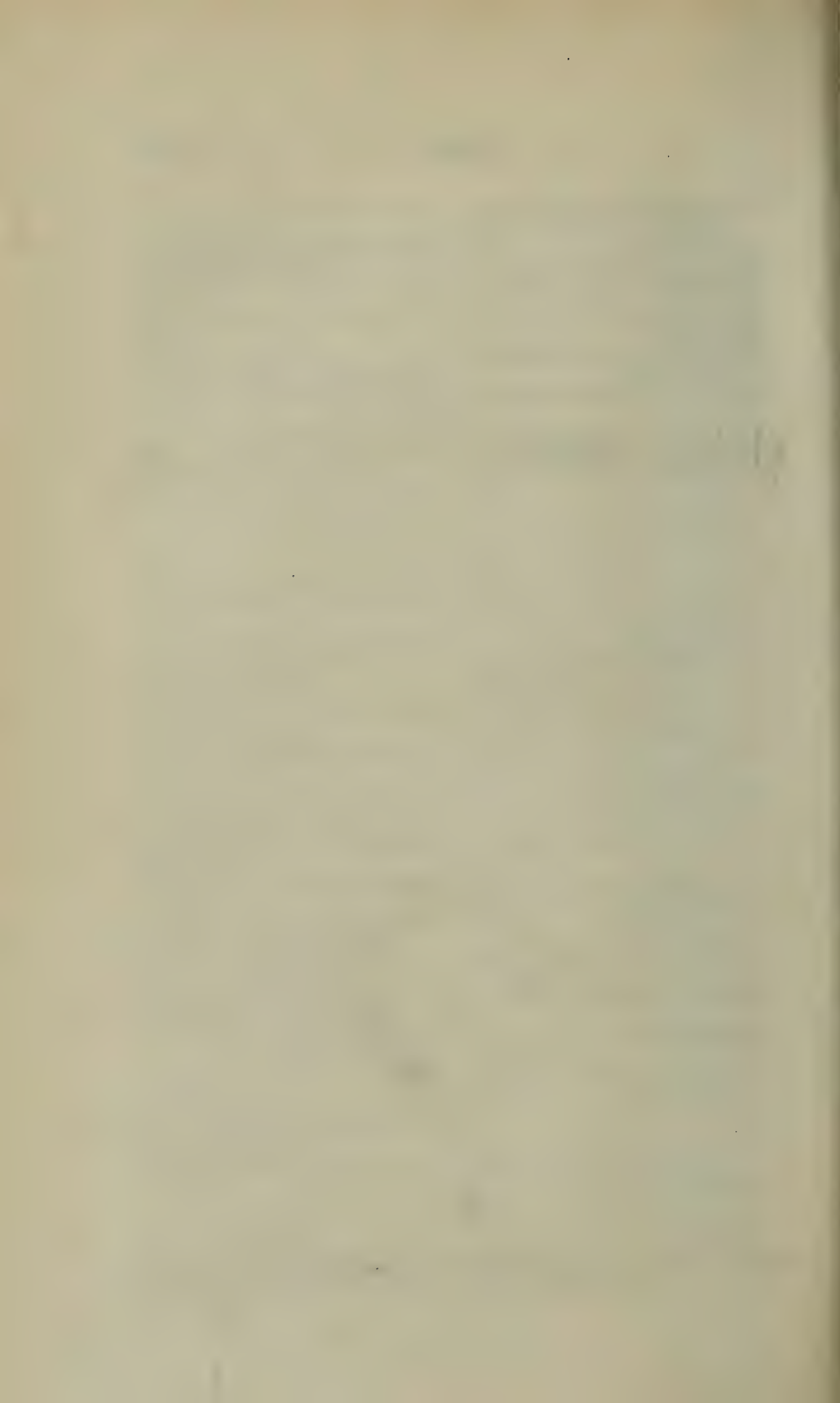
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| MONOCEROS . . . . .         | 4 . . . . .  | 0  | 5  | 6  |
| MUREX . . . . .             | 36 . . . . . | 2  | 5  | 6  |
| MYADORA . . . . .           | 1 . . . . .  | 0  | 1  | 6  |
| MYOCHAMA . . . . .          | 1 . . . . .  | 0  | 1  | 6  |
| MYTILUS . . . . .           | 11 . . . . . | 0  | 14 | 0  |
| NASSA . . . . .             | 29 . . . . . | 1  | 17 | 0  |
| NATICA . . . . .            | 30 . . . . . | 1  | 18 | 0  |
| NAUTILUS . . . . .          | 6 . . . . .  | 0  | 8  | 0  |
| NAVICELLA . . . . .         | 8 . . . . .  | 0  | 10 | 6  |
| NERITA . . . . .            | 19 . . . . . | 1  | 4  | 6  |
| NERITINA . . . . .          | 37 . . . . . | 2  | 7  | 0  |
| OLIVA . . . . .             | 30 . . . . . | 1  | 18 | 0  |
| ONISCIA . . . . .           | 1 . . . . .  | 0  | 1  | 6  |
| PALUDOMUS . . . . .         | 3 . . . . .  | 0  | 4  | 0  |
| PARTULA . . . . .           | 4 . . . . .  | 0  | 5  | 6  |
| PATELLA . . . . .           | 42 . . . . . | 2  | 13 | 0  |
| PECTEN . . . . .            | 35 . . . . . | 2  | 4  | 6  |
| PECTUNCULUS . . . . .       | 9 . . . . .  | 0  | 11 | 6  |
| PEDUM . . . . .             | 1 . . . . .  | 0  | 1  | 6  |
| PERNA . . . . .             | 6 . . . . .  | 0  | 8  | 0  |
| PHORUS . . . . .            | 3 . . . . .  | 0  | 4  | 0  |
| PINNA . . . . .             | 34 . . . . . | 2  | 3  | 0  |
| PIRENA . . . . .            | 2 . . . . .  | 0  | 3  | 0  |
| PLACUNANOMIA . . . . .      | 3 . . . . .  | 0  | 4  | 0  |
| PLEUROTOMA . . . . .        | 40 . . . . . | 2  | 10 | 6  |
| PSAMMOBIA . . . . .         | 8 . . . . .  | 0  | 10 | 6  |
| PSAMMOTELLA . . . . .       | 1 . . . . .  | 0  | 1  | 6  |
| PTEROCERA . . . . .         | 6 . . . . .  | 0  | 8  | 0  |
| PURPURA . . . . .           | 13 . . . . . | 0  | 17 | 0  |
| PYRULA . . . . .            | 9 . . . . .  | 0  | 11 | 6  |
| RANELLA . . . . .           | 8 . . . . .  | 0  | 10 | 6  |
| RICINULA . . . . .          | 6 . . . . .  | 0  | 4  | 0  |
| ROSTELLARIA . . . . .       | 3 . . . . .  | 0  | 4  | 6  |
| SANGUINOLARIA . . . . .     | 1 . . . . .  | 0  | 1  | 6  |
| SCARABUS . . . . .          | 3 . . . . .  | 0  | 4  | 0  |
| SOLETELLINA . . . . .       | 4 . . . . .  | 0  | 5  | 6  |
| SIPHONARIA . . . . .        | 7 . . . . .  | 0  | 9  | 6  |
| SPONDYLUS . . . . .         | 18 . . . . . | 1  | 3  | 0  |
| STROMBUS . . . . .          | 19 . . . . . | 1  | 4  | 6  |
| STRUTHIOLARIA . . . . .     | 1 . . . . .  | 0  | 1  | 6  |
| TEREBEA . . . . .           | 27 . . . . . | 1  | 14 | 0  |
| TEREBRATULA . . . . .       | 11 . . . . . | 0  | 14 | 0  |
| THRACIA . . . . .           | 3 . . . . .  | 0  | 4  | 0  |
| TRIGONIA . . . . .          | 1 . . . . .  | 0  | 1  | 6  |
| TRITON . . . . .            | 20 . . . . . | 1  | 5  | 6  |
| TROCHITA . . . . .          | 3 . . . . .  | 0  | 4  | 6  |
| TURBINELLA . . . . .        | 13 . . . . . | 0  | 17 | 0  |
| TURBO . . . . .             | 13 . . . . . | 0  | 17 | 0  |
| TURRITELLA . . . . .        | 11 . . . . . | 0  | 14 | 6  |
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